THE LANCET.

No. 4547. Vol. CLXXIX. LONDON, SATURDAY, OCTOBER 22, 1910. Pp. 160.

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The Harveian Oration

ON

SOME ASPECTS OF HEREDITY IN RELATION TO MIND.

Delivered before the Royal College of Physicians of London on Oct. 18th, 1910,

BY H. B. DONKIN, M.D. OXON., F.R.C.P. LOND., M.R.C.S. ENG.,

MEDICAL ADVISER TO THE PRISON COMMISSIONERS; DIRECTOR OF CONVICT PRISONS.

MR. PRESIDENT AND FELLOWS,—In offering the Harveian orator's solemn apology for accepting the honour conferred upon him I am personally conscious of discharging no vain formality. Having been long occupied in public duties but partly medical, and thus prevented from duly obeying the presidential biddings to the Comitia, I appreciated highly the compliment so graciously bestowed upon me by Sir Richard Douglas Powell in appointing me to this important office. The choice, however, of a fitting theme, and the difficulty, on an occasion like this, of handling that to which I inclined, caused me to hesitate gravely before taking up this honourable burden. Permit me now, Sir Thomas Barlow, while respectfully and cordially congratulating both yourself and the College on your succession to this famous chair, to plead for your merciful judgment on my present effort to fulfil your predecessor's behest.

HARVEY'S INJUNCTIONS IN REGARD TO THE ORATION.

The lapse of time since Harvey ordained this annual oration has rightly lessened the rigour of literal obedience to his injunctions. No oration in Latin has been heard for nearly half a century; nor has the annual feast been always celebrated within the College walls. In recent years, at least, no orator but Dr. Frederick Roberts has succeeded in the task of commemorating all our benefactors by name, this first Harveian injunction being usually fulfilled by the mention of such gifts made to the College, or such work achieved by its alumni during the past year, as may be deemed to increase its usefulness or redound to its glory. I cannot find that the year now passed has added to our benefactions of either kind. But there is one great name, besides that of Harvey whom we delight to honour unceasingly, that calls for signal note to-day. I am reminded that on the 6th of this month, 400 years ago, was born John Caius, nine times President of this College, virtual founder of the Cambridge college that popularly bears his name alone, and the second of the three illustrious ones on our roll to whom we can apply, in changing one word, the Lucretian saying, "Quasi cursores *medicinæ* lampada tradunt." Our own scholar-physician, Dr. Payne, whose frequent presence here is so sorely missed, has left in the minds of all who heard or read his Harveian Oration a vivid picture of Dr. Caius, stretching out one hand to our Founder, the famous medical humanist of the fifteenth century, the other to our immortal scientific physiologist of the seventeenth.

Though Caius, who taught Greek in Padua, and, later, essayed to prove that the University of Cambridge was founded in the fourth century before the Christian Era, may, in some respects, have been more nearly related in spirit to Linacre than to Harvey, yet his introduction of practical anatomy into this country, his work on "Some Rare Plants and Animals," and especially his admirable study of the sweating sickness, to which Payne refers as "the first original contribution to clinical medicine of which this country can boast," all, surely, tend to show that he had a true bent towards independent investigation, that his face was well set forwards, and that he sighted the beams of the rising sun of modern method. Let us, then, praise this famous man to-day as the first scientific physician on our roll.

I think that due reflection on the actual words and import of the historic document, wherein Harvey, among other express commands, enjoins the delivery of this oration, will justify some further adaptation of his orders in my endeavour to fulfil the spirit of his intentions. Harvey's motives were determined by the conditions of his time. Very prominent in this deed of gift is his intense desire to promote concord among the College members. The deed virtually begins and ends with insistent and particular warnings against discord, delicately though these warnings are expressed in terms of earnest call to professional harmony. Even the time-honoured order "to exhort the Fellows to search and study out the secrets of nature by way of experiment," brief as it is in comparison with his other and more emphatic injunctions, seems to echo his regret for the prevalent dogmatism and intellectual apathy of the physicians of his day. Doubtless Harvey enjoyed the high appreciation of many colleagues to whom he imparted his great discovery before giving it to the world. He was President-elect of this College. But it may be suggested, in view of his manifest superiority of intellectual grasp, that his commands were largely inspired by his sense of the defects of his medical contemporaries. Medical England was not ready for Harvey, albeit the spirit of science was abroad in the land, richly informing other branches of knowledge. This College, until long after his time, achieved little to foster even such a quest after a scientific basis for medical art as had been followed with insight by the great Greeks of old. Instead of encouraging scientific work by various honours and awards, as it does in our day, or of paying reverent tribute to scientific genius, as it did on that ever-memorable occasion when some of us were enabled at least to say *Darwin vidi tantum*, or of using its high privilege as a scientific body, by opening its doors as it did this year, to the defenders of research, it seems to have been busier in coercing the apothecaries, and in warning away from London the medical graduates of Oxford and Cambridge. But Harvey was in love with science; like Huxley, the great modern prophet of scientific method, he was penetrated by the missionary spirit, and eager to turn away his fellows from personal quarrellings and verbal disputations, he directed them towards the fruitful acquirement of medical truth by bidding them to the scientific study of nature for their better enlightenment.

If this view find favour, I may be pardoned for passing over what appears to me, in its literal sense, the most important of Harvey's exhortations, and for modifying adaptively that other special injunction to which, in common with my predecessors in this office, I strive to make response. If Harvey were with us now he would acknowledge that his dominant exhortation is needed no more; for he would note the extinction of rancorous disputes on medical superstitions and the rarity of overt personal jealousies, and would congratulate the physicians of to-day that only gross treason to medical truth and dishonourable conduct are likely to strain those fraternal bonds of science and a common profession which now so generally unite them. He would recognise also that the "way of experiment," even in the strict and modern sense of artificially designing conditions for the purpose of discovery, is now very widely followed, and would even justify the contention that this way of experiment, regarded exclusively as the only way to the attainment of sound knowledge, may sometimes lead to error instead of truth.

SCIENTIFIC METHOD.

It is solely in view of the biological nature of my subject, which, briefly, is that of Some Aspects of Heredity in Relation to Mind, that I venture to say here a few more words on scientific method. Outside the field of biology, or even of that section of it which is concerned with heredity, I might be charged with serving up a *crambe repetita*. But there seems to be a difference of opinion among biologists concerning the function and scope of experiment in the solution of scientific problems, some of them apparently holding, in view of the paramount necessity in some branches of science of the use of experiment in the ascertainment of facts or in the testing of hypotheses, that facts arrived at by observation alone are of minor value or comparatively negligible. At any rate, the well-known and accredited method of investigation which has been followed by Newton, Harvey, Darwin, and all great discoverers whose work is of permanent value, is not always employed. I mean, of course, the method (1) of observation (including the artificial variety called experiment), (2) of comparison and classification, leading to inferences or hypotheses or inductions, (3) of deduction, or prediction of the consequences which must follow on the assumption of such hypotheses, and (4) of verification, by the widest possible

appeal to all attainable and relevant facts, whether ascertained by observation or experiment, in order to see whether such consequences do or do not occur. The position that this—the method of "trained and organised common-sense"—is the method of all sciences of which the final aim is the discovery of causes, or interpretation, is perhaps not openly assailed; but there are some instances in biological writings where special value is apparently attributed to a fact because it has been found out by experiment rather than by simple observation; and also some instances of omission to test by deduction, and by a wide appeal to further relevant facts, hypotheses which have been based on experimental discovery alone. It is, of course, true that in sciences where, as in physics and chemistry, many of the facts are, in their nature, latent and obscured, the method of observation by way of experiment is indispensable for their discovery. So also is it indispensable over a large area of the field of physiology. But many facts in biology and medicine are patent to observation alone. Harvey, as a great physiologist, saw vividly the paramount importance of experimental work, both in ascertaining his facts and in deductively testing his conclusions; but surely neither he nor any other clear thinker would deny that when, in any field of study, such as that of the human being, normal and morbid, many patent and important facts present themselves clearly to direct observation, an injunction to proceed by the way of experiment only would prove to be a harmful limitation, and especially inimical to biological and medical inquiry. This subject of method is dealt with very luminously by Dr. Archdall Reid in his recent and attractive work on the "Laws of Heredity"—a book full of valuable thoughts and observations, which must tend to clarify greatly the reflections of many on the difficult problems of heredity, and especially those which relate to mankind.

In the present context this author says, "An hypothesis merely founded on facts, previously obscured, which have been revealed by experiment, has no special claim to accuracy. The subsequent thinking may or may not be accurate. To discover the accuracy of the thinking we have to use tests which that particular experiment, of course, cannot furnish. A neglect to *test* thinking founded on experiment, combined with an assumption that such thinking is necessarily accurate, is very frequent." This contention that a deductive test of conclusions arrived at by induction is necessary to establish proof, self-evident though it appears, has been stigmatised by some modern writers on biology as "merely deductive," "logical," "philosophical," "pre-Baconian," or even as mere "ratiocination," this last Latinised epithet being apparently preferred by the critic to the simple word "reasoning," for the sake of avoiding open discomfiture.

Such writers may well be referred to these words of De Morgan: "Modern discoveries have not been made by large collections of facts with subsequent discussion, separation, and resulting deduction of a truth thus rendered perceptible. A few facts have suggested an *hypothesis*, which means a *supposition* proper to explain them. The necessary results of this supposition are worked out, and then, and not till then, other facts are examined to see if these ulterior results are found in nature. The trial of the hypothesis is the *special object*, prior to which the hypothesis must have been started, not by rule, but by that sagacity of which no description can be given, precisely because the very owners of it do not act under laws perceptible to themselves. Wrong hypotheses, rightly worked from, have produced more useful results than unguided observation. But this is not the Baconian plan ..... What are large collections of facts for? To make theories *from*, says Bacon; to try ready-made theories *by*, says the history of discovery."[1]

I trust, therefore, that these few remarks prompted by my subject, which is concerned more largely with observation and reasoning than with actual experiment in the modern sense, will serve to excuse the version of the statutory exhortation which I now venture to deliver, in the form of a reminder, to all searchers of nature: To study out her secrets in every field, not by following any exclusive way, but by the use of that comprehensive method, common to interpretative sciences, which takes account of all authentic and relevant facts, and tests all thinking—the method, indeed, that was followed so notably by Harvey himself.

[1] See De Morgan's Budget of Paradoxes, pp. 55–56, quoted in Welton's Manual of Logic, vol. ii., p. 60.

My occupation of late years, much concerned as it has been with such matters as crime, inebriety, and mental defect, has directed my attention afresh to the subject of the evolution and inheritance of mental characters—a subject which attracted me, when, in the course of somewhat erratic reading for the Oxford Classical School, I perused the Origin of Species, then "mewing its mighty youth," and also the first edition of "The Physiology and Pathology of Mind," by our now renowned Fellow, Dr. Maudsley. As a further excuse for my choice of matter I may claim, as an encouraging precedent, the recent Harveian Oration by Dr. Ormerod, in which he showed, by quotations from the "Exercitationes de Generatione," that Harvey's mind had certainly dwelt on the subject of heredity in some of its aspects. And I hope before I close to show, from my own study of this great work on "Generation," that Harvey had at least a glimpse, among other cognate questions, of the want of some useful distinction between so-called "innate" and "acquired" characters—a want which, indeed, furnishes the point of many of the remarks I shall now submit. These are chiefly intended to emphasise the immense importance to man's life and progress of the characters called "acquired"—an importance, in my judgment, greatly underrated by some modern biologists.

EVOLUTION OF MIND.

I must first assume, with but brief comment, the position that mind has been evolved. Only on this assumption is it possible to inquire scientifically into the question of the inheritance of mental characters, and to seek for even a proximate explanation of their development and defect. I know, indeed, of but one living evolutionist of great and rightful fame, the co-discoverer with Darwin of the Law of Natural Selection, who, Darwinian or even ultra-Darwinian though he is on other points, explicitly holds that the origin of the mind and of sensation or consciousness in all organisms is, equally with that of life itself, outside the field of natural operations, and necessitates the assumption of a new power of spiritual essence.[2]

However true it may be, such a belief can be neither disproved nor contested by scientific reasoning. But while some relegate wholly such questions as these, with that of the primal origin of the universe, to the sphere of supernature, others feel compelled to seek for natural laws in any direction where scientific method may possibly guide them. For these the study of man, as we find him, practically presupposes that the development of his mind, with all its capacities, has depended on that of his mighty brain, which has been organically evolved under the influence of natural selection. Darwin himself taught the grammar of the evolution of mind, tracing it upwards from instincts to reason, from lower to higher organisms. Thus he laid the foundation for further scientific inquiry into the questions of the development and transmission of mental characters.

In making this assumption regarding the evolution of mind I assume, too, without argument, and for brevity's sake, the Darwinian doctrine which implies that the variations on which natural selection mainly works in the evolutionary process are germinal or innate, and are not caused by the action of the environment. Darwin, himself, in the chapter on the "Conditions of Life" in his book on "Variations[3] of Animals and Plants, &c.," after discussing the different possible causes of variation, sums up as follows: "We may conclude that the constitution of the individual is of far higher importance than the conditions to which it has been exposed. It is a general rule that conspicuous variations occur rarely, and in one individual alone out of millions. As the most strongly marked variations graduate insensibly into the most trifling, we are led by the same train of thought to attribute such slight variations much more to innate differences of constitution, however caused, than to the definite action of the surrounding conditions." And lastly, I shall assume the accordant doctrine, which is now held generally by most biologists, though apparently ignored by some and explicitly rejected by a few, that characters, commonly called "acquired," which depend on somatic modifications caused in the individual after birth, or, as some express it, are developed in the parents only under the influence of use and experience, are not developed in descendents in the absence

[2] See Wallace's Darwinism, pp. 461 et seq.
[3] See chapter xxii. of this work.

of similar influences, although the potentiality of such development is organically inherent in the innately variable germ-plasm.

I need hardly say that it is not my intention to attempt a discussion of the doctrines that conflict with these assumptions. Believing, however, (1) that the part played by non-transmissible acquirements has been, and is, of paramount importance to the progress of man in his never-ending attempts to make conquest of natural forces, or to destroy the effects of his own mistakes; (2) that the present biological evolution of man is to a predominant extent limited to a struggle against disease; (3) that there is no evidence to show that human mental capacity on the whole has materially increased within, at least, historical times; and (4) that the theory of natural selection according to Darwin, supplemented, as I have indicated, by that of Weismann, is the best explanation available of the development and inheritance of cerebro-mental functions, I cannot avoid certain incidental references to the teaching and methods of some who hold widely different views. And here I desire it to be understood, once for all, that in my incidental references to Mendelian views I am not calling in question such facts as have been established by this school of workers. I protest here mainly against the Mendelian hypothesis of "unit-segregation" being termed a "discovery," and employed as a fact in argument.

Necessity of Clear Conceptions as to Heredity and Definite Use of Terms, Illustrated by Three Topics.

The topics of "criminology," mental defect, and "eugenics" may serve to illustrate the necessity of clear conceptions and a definite use of terms when we speak of the difference between "innate" and "acquired" characters. The *first* topic, that of so-called "criminology," demands, for the purpose in view, but a brief notice. Law-breaking, or criminality, is no unity. There are no special qualities, physical or mental, common to all criminals. The only important link between the study of crime and that of heredity is the fact that a considerably larger minority of persons with clearly appreciable mental defect, apparently of congenital nature, is found among convicted criminals than in the population at large. The notable number of mentally defective persons among criminals who are sentenced to penal servitude, and are usually the perpetrators of serious crime, impressed me at the outset of my prison work. Though it is difficult, and often impossible, to obtain an adequate history of the early life of these men, it is practicable, from inquiry and from study of the men themselves, to assert with much confidence that a significant proportion of them are of primarily defective mental capacity, or, as the old legal phrase has it, are "a nativitate mente capti." This conclusion is arrived at, independently of their criminality, from positive indications of mental defect observed in their conduct, and, in some cases, from certain concomitant physical characters. This class of mental defectives includes criminals of many kinds. They are, it seems, innately unable to acquire the complex characters which are essential to the average man, and, according to their surroundings, they follow the path of least resistance. This path is more often than not, but by no means always, the path of unsocial or criminal action. These statements about criminals will appear to be dogmatic, but are, I think, capable of proof. I have reason for believing that the report of an extensive inquiry now nearing completion, which has been carried out by the medical officers of our convict prisons, will go far, in itself, towards their justification. This matter, indeed, is of importance, not because any serious students of this subject now accept the doctrine of hereditary criminality or consider the so-called science of "criminology" as aught else than a mass of imperfect and unclassified observations linked together by untested hypothesis, but because this doctrine, so much emphasised by Lombroso, Max Nordau, and others, of the hereditary nature of crime, or, in other words, of the criminal being a racial "degenerate," is still very dominant over the public mind. It is widely popularised at the risk of producing practical effects, not only by writers of fiction, but also by philanthropists, journalists, and public speakers on social questions. It is apparently assumed as true by at least one prominent writer on biology;[4] while another disciple of Mendel proclaims that an "anarchist" is a germinal "mutation," which will breed true like other "sports." As all know, there is in this context much loose talk about so-called "degeneracy." This word "degeneracy" is mostly used without regard to its only legitimate meaning, which, of course, denotes *racial* change; and abounds in many works which are popularly mistaken for scientific studies. It follows from these remarks that it is unnecessary to discuss any question of relation between this doctrine and the scientific problems of the evolution and inheritance of mental characters, for no really rational hypothesis of hereditary criminality has been even formulated.

Causation of Congenital Mental Defect.

My *second* illustrative topic is that of the causation of such mental defect as is usually called "congenital." The evidence concerning this matter, which was abundantly tendered by medical and other witnesses to the Royal Commission on the Control of the Feeble-minded, of which I was a member, evinced a frequent confusion or absence of thought on the meaning and right use of the word "heredity." This evidence, some of it being of great value, was accepted, after some discussion, by the Commissioners, although the question of causation had not been explicitly referred to them. It was therefore dealt with to some extent in the report, although the constitution of this commission, in common with that of some others on cognate subjects, was not adapted to deal exhaustively with questions involving scientific, and especially biological, problems in relation to human beings. Some of the witnesses held that the forms of mental defect under consideration were largely inherited, while at the same time they attributed their occurrence in offspring to quite different characters in the parent, such as alcoholism, tuberculosis, malnutrition, or other disorders incident on slum conditions or unhealthy surroundings generally. Others considered all cases of mental defect as "hereditary" when there was any history of insanity or "nervous disorder" of almost any kind among the more or less immediate ancestors. Others, again, used the word "heredity" in the strict sense, and applied it only to characters which appear to be organically innate or "germinal," and are of like nature with ancestral traits. So apparent, indeed, even to the non-medical members of the Commission were the confusion of thought and the inaccurate language which pervaded much of the evidence on this head, that the report expressed the unanimous opinion that the important subject of heredity should be especially emphasised in the medical curriculum.

It is impossible to discuss here the complicated question of the causation of congenital mental defect. My main object in speaking of it is, as I have said, to illustrate the importance of forming clear conceptions concerning heredity, and of carefully defining the terms we use. It may be said, however, that although there are no adequate statistics showing the comparative numbers of such defectives engendered by normal and defective parents respectively, there is a wide consensus of opinion, based on much accurate observation, that a lineal sequence of defectives is sufficiently frequent to render it highly probable that this condition is in a large number of instances truly innate and thus transmissible, or, in other words, that it is thus dependent on a germinal variation of the brain. Those who accept, as most biologists ostensibly accept, the conclusion that characters developed by parents after birth in response to environmental influences are not transmitted to offspring as innate characters not requiring such influences for their development, must reject wholly the doctrine that bad nutrition, or other evil conditions or diseases contracted by the parents, can appear in the offspring in the form of such abnormalities of the brain as must subsist in all, as it is known to subsist in many, of the cases of mental defect we are now considering. They will hold, as a more likely hypothesis, that such mental defect, especially in the absence of any injury to the brain of the offspring during fœtal life or at birth, is, at least in most cases, a spontaneous variation, probably in the direction of some ancestral condition, and tending to be

[4] Professor Bateson, in his book on Mendel's Principles of Heredity, p. 306, writes as follows, after having stated on a previous page that in "the pre-Mendelian period, the expression 'genetic' had no definite meaning": "Genetic knowledge" (by which, it may fairly be presumed, is meant the doctrine of heredity according to the Mendelian hypothesis of unit-segregation) "must certainly lead to new conceptions of justice, and it is by no means impossible that in the light of such knowledge public opinion will welcome measures likely to do more for the extinction of the criminal and degenerate than has been accomplished by ages of penal enactment."

transmitted to descendants. Those, on the other hand, who attribute such mental defect to various modifications acquired by the parents during their lifetime must not only believe in a multiplicity of causes for a similar effect, but must also hold the view of the modification of the germ-plasm by environmental influences to such a wide extent as would involve the necessary inference of the rapid degeneration and ultimate destruction of the race as a whole. I cannot now pursue this interesting subject, and will but express my opinion that the conclusive answer to this particular question will probably not be given without a more extensive knowledge of facts than is at present available. From all that I have been able to gather from the best authorities on the physical characters of the brain of imbeciles, no absolutely positive statement can yet be made from the anatomical point of view as to how far true retrogression, or how far arrest of fœtal development, can be said to contribute towards the solution of this problem.

EUGENICS.

My *third* topic is that of "eugenics," a subject of present-day interest, both to scientific workers and to the public at large. The main object of human eugenics, according to Sir Francis Galton, the inventor of the term and the originator of the inquiry it embraces, is the discovery "of the amount of change in racial qualities which can reasonably be anticipated," and what can practically be done in the direction of effecting an improvement in such qualities "by selective breeding."[5] I shall refer here to the method of this research only as it concerns the question of the inheritance of *mental* characters. The method generally is to deal measurably and statistically with "faculties" or "characters" that are variously distributed in a large population. If, for instance, the proposition be true, that there is in any nation greater "fertility" of the mentally inferior than of the better and more able "stocks," and if it be assumed that the use of the word "stock" implies that the mental difference referred to is of innate or germinal origin, then it follows that the only remedy would be a possible alteration of the relative fertility of such stocks. Now, without raising here any question as to the definition of the word "fertility," it is apparent that any possible improvement of a stock depends on some assumption that the qualities under consideration are really innate and transmissible. However accurately the calculating apparatus may work in dealing statistically with the material collected for its operations, the practical value of the result attained must rest entirely on the nature of the items of material which are thus operated upon. And the important question then arises: Are such "characters" as, for instance, "ability" or "probity," really indications of "stock" qualities? Are they germinal and transmissible, or acquired? As to "ability," if this term were strictly defined in a certain way the answer might be that it is germinal; if defined in another way, that it is acquired. As to "probity," it seems to me, at least, plain that the reply must be that it is acquired.[6]

Touching the mental and moral characters of man, there is massive evidence which shows that many even of the most importantly adaptive among them are the result of "modifications," developed in each individual under the stimulus of actual use and training alone. Such characters are mainly and clearly traditional; they are handed down by each generation to the next through teaching and example, not through real inheritance; but their constant acquirement by every generation gives them the appearance of naturally inherited qualities. This question should cause all students to pause and consider seriously before they assume that any given character is not only inborn but has also been developed apart from such influences, or in other words, is not an "acquired" or "somatic" modification. These remarks appear to apply also to the utterances of many adherents of the Mendelian school of biologists, who, though widely differing from the biometrical school in respect of fundamental questions of evolution and heredity, seem, in common with their opponents, to consider acquired mental characters, or "modifications," as unimportant; and to class such qualities as they deem at all important with those which are "germinal" and require no external stimulus for their development other than such as is implied in life itself.

I must especially state here that I fully recognise the importance of possible attempts to improve the human race either by limiting or eliminating the bad, or by encouraging the good stock. We may, perhaps, have knowledge enough already to make some practical advance in what has been styled, and by some depreciated, as "negative" eugenics. But we must bring much more biological knowledge and very clear minds to bear upon the subject before attempting any measure in the direction of "positive" eugenics, and especially in that of "selective breeding" on the basis of what we regard as innate mental characters. In connexion with the desirability of limiting the production of mental defectives on the hypothesis—which, although not demonstrated, is regarded as highly probable by most observers—that mental defect is largely innate and transmissible, I would mention the following facts, taken from Dr. Ireland's book on "The Mental Affections of Children," as suggesting reflection on the question of making such a step in the direction of negative eugenics as that of trying to minimise the production of mental defectives. The average mortality, during a certain period, of imbeciles between the ages of 5 and 20 years in two large asylums was at least nine times as great as that of sound-minded young persons at the same period of life in corresponding years. Dr. Ireland adds that in an asylum well known to him, the substitution of a non-resident doctor for a resident medical superintendent was followed by a rise in the death-rate above double. His comment on this implies his opinion that the protection of the lives of imbeciles is an important function of medical art. From one point of view this opinion is right, but from another we are led to reflect how often Nature's method of negative eugenics is effectively antagonised by man. Though imbeciles in asylums are of course incidentally prevented, for the most part, from propagating, infinitely larger numbers of many grades are permitted to bear and beget children from sentiments very similar to those which tend to foster any measures for prolonging the life of all.

The necessity of some clear conceptions of the nature of "innate" and "acquired" characters, as well as of heredity and of the evolutionary process, is now abundantly evident, whether mental or bodily characters be the subject of study. Even though biologists may perhaps agree in the belief of the continuity and a high degree of inviolability of the germ-plasm, in the consequent non-transmissibility of acquired modifications, and in the doctrine of evolution by the action of natural selection on germinal variations alone, they certainly differ as to what characters should be classed as germinal variations or acquired modifications respectively; and such differences are manifestly important. They also notoriously differ as to whether the material for natural selection consists mainly of small and so-called fluctuating variations as necessarily implied in the theory of Darwin and Wallace; or only of "sports": "large," or "discontinuous," or "saltatory" variations, now commonly called "mutations," which are said to be stable from the first, and alone to be of "genetic" value in evolution. This latter hypothesis was long ago opposed to Darwin's theory by the late Mr. St. George Mivart, who held that new species manifest themselves with suddenness and by modifications appearing at once; and, in a more elaborate form, based on "some facts and a hypothesis," is promulgated by mutationists and some Mendelians of the present day, who more than hint that the Darwinian theory of natural selection is largely a superstition. Differing hypotheses are also upheld, by the followers of the Mendelian and Galtonian methods respectively, in connexion with the hereditary transmission of characters: the one school adopting that of the unit-segregation of characters in the germ-plasm, the other those which are known as the laws of "ancestral inheritance" and of "filial regression."

TRANSMISSION OF "EDUCABILITY."

I have said that I have no intention of discussing here the various opinions alluded to. I shall consider, only and briefly, that exposition of biological evolution and heredity in relation to man and his mind which seems to cover fitly

[5] See the "Herbert Spencer" lecture by Sir F. Galton, 1907, Clarendon Press, Oxford. See also "Natural Inheritance," 1889, "Huxley Lecture" (1901), and several papers by the same author in the "Memoirs of the Sociological Society"; also Professor Pearson's "Huxley Lecture" (1903) in vol. iii. of "Biometrika."

[6] I am aware that it may possibly be said that any statistical inquiry resulting in the inference that "probity is inherited" does not necessitate any special theory of heredity; but it seems clear that a definite conception of what the word "inherited" means is necessary in the practical context of this matter of selective breeding, which explicitly concerns the research in question.

the complex facts which present themselves and to be contradicted by none of them: I mean the theory of evolution as set forth by Darwin and by Wallace, and as supplemented by the doctrine of the non-transmissibility (to offspring) of acquired modifications—i.e., modifications developed in the parent after birth under the stimulus of use and experience alone. Darwin himself, as I have said already, taught the grammar of the evolution of mental and moral characters, basing his argument on the existence of the social instinct in man. He formulated, however, no positive theory of heredity, though he saw the need of one; and, assuming the probability of some characters acquired by parents being transmitted as such by immediate inheritance to their offspring, he suggested the hypothesis of pangenesis. In his "Descent of Man," nevertheless, he displays in more than one place some hesitation in accepting his own tentative opinion on this point. Writing of Spencer's hypothesis of the transmutation of experiences of utility, by a process of continued transmission and accumulation, into inherent faculties of moral intuition, he suggests that, if insanity and other morbid mental or moral tendencies connected with cerebral or other bodily states can be transmitted, it is probable that good tendencies are transmitted likewise. "Even the partial transmission of virtuous tendencies," he says, "would be an immense assistance to the primary impulse derived from those social instincts which are the true basis of moral evolution by selection." "Admitting," he says further, "for a moment that virtuous tendencies are inherited, it appears probable that they become first impressed on the mental organisation through habit, instruction, and example continued during several generations in the same family." But he adds, "My chief source of doubt with respect to any such inheritance is that customs, superstitions, and tastes, such as the horror of a Hindoo for 'unclean' food, ought, on the same principle, to be transmitted. I have not met with any evidence in support of the transmission of superstitions, customs, or senseless habits."

The doctrine of the leading biologists of the present day who recognise the truth of the principles of evolution as established by Darwin, and who hold, in substitution of Darwin's supposition of the transmissibility of some acquired characters, that it is "educability," or the organic capacity for making such acquirements, not the acquirements themselves, which is innate and transmitted, seems to form the only synthesis which covers the known facts of heredity, is contradicted by none, and tends, in consequence, to be of further interpretative value. The conclusion is evident, in the application of this doctrine to mental development, that "the mind of the human *adult* is mainly a social product, and can be understood only in relation to the special environment in which it develops, and with which it is in perpetual interaction." "The recognition of this truth," said Sir Ray Lankester in his Presidential Address to the British Association, "seems to be the most important advance in psychology in recent years."[7] It follows that the innate and transmissible factor of the mind of man is the organic potentiality for making mental acquirements, which, in man, has been highly evolved by natural selection. In this context I would make special reference to several pages which follow on the quotation from the address I have just mentioned. I can, however, quote now but one passage, which very closely bears on the relation of scientific psychology to the theory of the origin of structural characters by natural selection. "In discussing," says the author in a communication to the Société de Biologie of Paris in 1899, "the significance of the great increase in the size of the cerebral hemispheres in recent as compared with Eocene mammals, and in Man as compared with apes, I came to the conclusion that the power of building up appropriate cerebral mechanism in response to individual experience, or what may be called 'educability,' is the quality which characterises the larger cerebrum, and is that which has led to its selection, survival, and further increase in volume. The character which we describe as educability can be transmitted; it is a congenital character. But the results of education *cannot* be transmitted. In each generation they have to be acquired afresh. On the other hand, the nerve mechanisms of *instinct* are transmitted, and owe their inferiority as compared with the results of education to the very fact that they are not acquired by the individual in relation to his particular needs. To a large extent the two brain mechanisms, the instinctive and the 'individually acquired,' are in opposition to one another. The loss of instinct is what permits and necessitates the education of the receptive brain."

A very full and detailed exposition of this most important truth, with its numerous bearings, is given by Dr. Reid in the remarkable book to which I have already referred.[8] In that part of it which treats of the development of mind he maintains, by an array of evidence, that the great peculiarity of the human being as compared with other animals is that the most distinctive characters of his mind arise much less, as he expresses it, under the stimulus of nutriment alone, and much more under that of use and experience; that his instincts are fewer, while his capacity for making acquirements is infinitely greater and more variable; and that since "nature" has rendered man transcendently responsive to the "nurture" of use and experience, the question, so often asked, whether nature or nurture plays the most important part in the development of the human mind, has really but little meaning. "Capacity" or "ability" for making mental acquirements is innate and transmissible; it resides in various degrees in the immense brain of man; but for its development in special directions it requires the appropriate stimulus. The physical and mental maturity of the normal human being thus depends very largely on acquirements, the making of which is as essentially a part of adult development as is the growth of head and limbs of fœtal development. In terms of structure we may regard the innate mental characters as depending on cerebral mechanisms which are germinal, inherently active, and transmissible; and the acquired characters as depending on mechanisms developed after birth in the still organisable substance of the brain, but as developed only under the influence of the environment, as somatic modifications, not transmissible.

In a recent and practical text-book on "Mental Deficiency,"[9] the following expression of the difference in question is somewhat similar in effect to those which I have mentioned. "The development of mind," says the author, Dr. Tredgold, "takes place in consequence of two influences: spontaneously, or an inherent tendency of the brain-cells to develop, and stimulation of these cells by external impressions. The brain of the healthy child is capable of utilising and responding to any surroundings, within ordinary limits, in which it may be placed. The defective mind is lacking in this power. One of its chief characteristics is a want of what may be termed 'mental aggressiveness.'" It seems to me that the author here implies that what he terms "mental aggressiveness" is innate, and that the power of response to the environment is in direct proportion to the development of this quality.

If, then, it should be proved that imbecility is largely transmissible and innate, it may be thus far regarded as a possible reversion to an ancestral condition, though the reversion is, of course, not complete. Stated by Dr. Reid, in terms of mind, the defect of the imbecile is that he cannot learn; he lacks, or is greatly deficient in, the power of making mental acquirements; he is not able, as the normal individual is, to profit from experience; he has little or no memory, a mental quality depending on a late stage of cerebral evolution, and constituting the primary factor in the power of making mental acquirements. While he has lost the power of profiting by experience he has regained no part of the lost power of being guided by instinct. Therefore he is comparatively helpless as compared to the lower animal. But the instincts which normal beings possess, such as, for instance, the sexual, may appear unduly prominent in him, for he cannot learn to control them.

IMPORTANCE OF EDUCATION.

These general considerations on the subject of "innate" and "acquired" characters afford a good illustration of the different conclusions which may be arrived at on this and other matters, according to the different views held by inquirers concerning evolution and heredity, or to the different methods of investigation followed. Some biologists, holding certain principles of heredity, and basing their

[7] See Lankester's Kingdom of Man, p. 122 (Constable, 1907).

[8] The Laws of Heredity, by Archdall Reid, M.B., F.R.S.E. Methuen and Co., 1910.

[9] Mental Deficiency (Amentia), by Dr. Tredgold. London: Baillière, Tindall, and Cox. 1908.

inferences mainly on facts statistically arranged, appear to regard most moral and intellectual characters as instincts, and, as such, inherited. In common, apparently, with the otherwise widely differing school known as Mendelian, these regard the body and mind of an adult human being as consisting of innate and acquired characters, and hold that all the important mental characters are germinal and transmissible, and can therefore be made, by selective breeding, factors in true evolution. It is needless to dwell on the wide gulf which practically separates this view from that of those who believe that the innate mental characters of man, though of immense racial importance, and possessing great variability, are few in comparison with those which have been acquired and are demonstrably not transmitted; that most characters of the highest social importance are only traditionally handed down; and that even the achievement of civilisation by a savage race implies no necessity of germinal alteration. Reflection on these problems leads, I think, to the probable conclusion that man's mind, like his body, is certainly both born and made, but that his adult mind is much more made than born. The slow evolution of the brain and its functions through the natural selection of adaptive variations has produced the enormous inborn power of making mental acquirements that is now the organic heritage of man. Thus, among innumerable acquirements, he has gained the unique facility of recording his discoveries and thoughts by the instruments of speech and letters, and thus he has created a traditional wealth of knowledge—a veritable and priceless heritage of a wholly different kind "treasured up on purpose to a life beyond life."[10]

The manifest bearing of these truths on the principles of education indicates that the right object of education is to fit human beings for their social existence, to make them good citizens, and to afford those with gifts above the average the opportunity of developing them. Education modifies and greatly makes the individual, but it does not affect the biological evolution of the race. It has been strikingly written by an eminent Darwinian—Sir William Thiselton-Dyer—that, "there is no more pathetic feature in human experience than to see descend into the grave, to pass away for ever, all those endowments with which genius and labour have adorned individual human beings. The cunning hand of the artist, the entrancing skill of the musician, the song of the poet, the eloquence of the orator, all perish with their possessors, and 'leave not a wrack behind.' Were it otherwise the toil of education would have been mitigated, and there would have been no bounds to the mental acquirements of the race. But when our first parents tasted of the tree of knowledge, the tree of life was denied them, and knowledge perishes with its possessor."[11] It is perhaps from reflections such as these that some men eagerly welcome any biological teaching which tends to minimise the immense importance to man of his acquired character, or to justify in any degree the belief that such characters are naturally transmitted from parents to offspring. But Tennyson's words still ring true for us. Though "the individual withers, the world *is* more and more"; though nature seems "careless of the single life," she is very "careful of the type": and we may still join in the poet's youthful and stirring cheer to—

> "Men our brothers, men the workers, ever reaping something new;
> That which they have done but earnest of the things that they shall do."

Since man invented speech and letters the results of his acquirements have been immortalised. The age-long lessons and records of his thoughts and achievements have alone directed and still increasingly illuminate his onward march. But were it possible for these lights to fail, were all the knowledge and civilisation acquired by the human race to perish, "the mind's great age" would hardly "begin anew," for the race itself in the struggle for life would probably cease to be.

MENTAL ACQUIREMENTS NOT TRANSMITTED.

Small as is the knowledge we possess as yet of the beginning, limitations, qualities, and operations of the mind, there may be much for us to learn from further observation of various diseased states of the brain, as well as from continued use of the methods of experimental psychology and from the investigation of hypnotic phenomena, so ably advocated by Dr. Savage in last year's Harveian Oration. But we know a little more perhaps about the evolution and development of the body, including that of the brain. By those who incline to that view of heredity which seems to make the nearest approach to truth, the germinal factor in this organ will be regarded as the substratum and condition of all mental development, endlessly transmissible, infinitely variable, and richly endowed with capacity for making acquirements; but as standing, nevertheless, in absolute need of external influences in order to develop most of the distinctive and special characters which we recognise as intellectual and moral. With the germ-plasm, as a whole, in all its variability and liability to death and injury, the mind's organ is approximately inviolable to vital and transmissible change from the action of the environment, and no mental acquirements or modifications developed during an individual life-time are transmitted to descendants. The germ may die, but living it will not surrender its essential qualities to the action of external forces. The spontaneous variability of the germ appears to be a basal conception, necessary at present to all evolutionists, for the origin of so-called "genetic mutations" is confessedly as mysterious and "spontaneous" as that of the fluctuating variations, among which, according to the theory of Darwin, natural selection mainly works in the production of fixed species. The origin of mutations, indeed, would seem to be the more mysterious, since these are said to be "genetic" or fixed from the start, and thus might as well be described as "special creations." Further, the belief in the great resistance of the germ-plasm to transmissible organic change from external action seems to be necessary for any explanation of heredity whatever. The cause of normal hereditary transmission is surely at least as mysterious as that of any variations, small or great, fluctuating or discontinuous, unless the well-nigh demonstrable doctrine of the continuity and approximate inviolability of the germ-plasm be fully accepted. Without the aid of this pregnant hypothesis all biologists must confess that the simple but weighty question asked by Harvey, "How does like ever generate like?" is still wholly unanswered.

OBSERVATIONS OF HARVEY ON HEREDITY.

That some of the problems I have glanced at were even vividly present to Harvey's mind appears from the following quotation from Willis's translation of the work on Generation. The question of hereditary transmission and of reversion to ancestral types is raised when he writes: "In reference to the subject of family likeness we may be permitted to inquire as to the reason why the offspring should at one time bear a strong resemblance to the father, at another to the mother, and at a third to progenitors, both paternal and maternal, further removed, particularly in cases where at one bout and at the same moment several ova are fecundated. And this, too, is a remarkable fact that virtues and vices, marks and moles, and even particular disposition to disease, are transmitted by parents to their offspring, and that while *some inherit in this way all do not.* Numerous qualities, in fact, both of mind and body, are derived by hereditary descent." Again, he says: "I have frequently wondered how it should happen that the offspring, mixed in so many particulars of its structure or constitution, with the stamp of both parents so obviously upon it in so many parts, should still escape all mixture in the organs of generation; that it should so uniformly prove either male or female, so very rarely an hermaphrodite." Here the modern problem of the alternative development of certain characters is apparently suggested.

In the Exercise "Of the Order of the Parts According to Aristotle," and in a context which need not be specified here, Harvey quotes some of Aristotle's words as follows: "..... *as then man's growth being complete and mind having been superadded* .....," and he adds: "In other words (and as I interpret the passage), adult man having acquired sense and prudence." Is there not an inkling here of the great question regarding "inherited" and "acquired" characters? Again, in the next Exercise, Harvey writes: "The proportion of the body to the extremities in children after their birth continues excessive until they begin to stand and run." May he not imply here the

[10] See in this connexion A. R. Wallace on "Evolution and Character," Fortnightly Review, January, 1908; Archdall Reid, "The Present Evolution of Man," 1896; and "Laws of Heredity," 1910. See also Basil Thomson, "The Fijians" (Introduction on "Decay of Custom"), 1908.

See Edinburgh Review for October, 1902—Article on "Darwinism."

necessity of use in the development of certain physical characters which otherwise would not appear? And, further on, he says: "Man comes into the world naked and unarmed, as if Nature had destined him for a social creature and ordained him to live under equitable laws and in peace, as if she had desired that he should be guided by reason rather than be driven by force; therefore did she endow him with understanding and furnish him with hands that he might himself contrive what was necessary to his clothing and protection."

Once more Harvey profoundly reflects: "The vegetative faculty of parents engenders in conformity with determinate laws in the same way as light things rise and heavy things descend, and the semen arrives at the form of the fœtus as the spider weaves her web, as birds build nests, or as bees and ants construct dwellings and lay up stores for future wants, all of which is done naturally and from a connate genius or disposition, by no means from forecast, instruction, or reason. That which in us is the principle or cause of artificial operations and is called art, intellect, or foresight in the natural operations of lower animals is nature, which is *αὐτοδίδακτος*, instilled by no one: what in them is innate or connate is with us acquired." Here Harvey's thought verily seems to have been searching for some distinction between the nature and mode of development of innate and acquired characters, and dwelling on the immense importance to man of what we have regarded as his acquirements, the mechanism of which he cannot transmit to his offspring.

MAN MUST "CULTIVATE HIS GARDEN."

We may hold, then, that by the achievements of his mighty brain, with its inborn "educability," "memory," or ability to make acquirements in response to his environment, man has entered into his kingdom. This ability, of infinite variety though it is in different individuals, is normally immense, and its organic mechanism marks man's brain alone. At birth the individual mind is equipped in full measure with that capacity of development which is its lot. This capacity is shown at its highest power in early life, though its activity endures for years. But the direction such development takes depends mainly or wholly upon influences or stimuli from the external world, and what we recognise and speak of as the intellectual and moral faculties are the immediate products of external influences which actuate the potencies of each individual brain. We may fancifully figure man's mind at birth as a many-chambered mansion of noble plan and wondrous structure, awaiting the majority of its owner for its full utility and final adornment. More justly, perhaps, for the purpose of illustrating these reflections, we may liken it to a garden endowed with bountiful soil, the produce of which depends on the quality and the nurture of the plants grown within it. And the lesson is, man must still "cultivate his garden" and cultivate it aright. Should he neglect it, and should he not then inevitably perish (for it is his only resource), it would revert to its earlier and wilder condition under the cessation of selection, and the forces of circumambient Nature. In his book—the "Kingdom of Man"—from which I have already quoted, Sir Ray Lankester says: "Civilised man is a successful rebel against Nature, who by every step forward renders himself liable to greater penalties. His only hope is to control the sources of these dangers." Now if it be admitted, as Dr. Reid has so fully shown, that man's evolution to-day is mainly against disease and other destructive agencies, that there is no evidence in favour of any marked germinal improvement, within at least historic or even much earlier times, of man's mental capacity, and that his enormously increased and increasing powers of adapting himself to Nature and of controlling her forces, or, in other words, his advancing civilisation, are mainly the products of his acquirements, it follows that in all our attempts to promote "eugenics," and still more (because the object is immediately practicable) to improve the education of our youth so as to adapt them to the inexorable exigencies of their time, we must duly recognise that the progress and the efficiency of man, whether destined to be permanent or not, are by no means questions of breeding alone. "Education," says Huxley, "is the instruction of the intellect in the laws of Nature, under which name I include, not merely things and their forces, but men and their ways, and the fashioning of the affections and the will into an earnest desire to move in harmony with those laws." There is truth, too, in Huxley's saying "that the stupidity," and I might add, the superstitions, observable among the so-called "educated" classes of to-day "is largely caused by the repressive action on natural intellectual appetites of a Procrustean system of artificial teaching." In these classes especially abound the Christian Scientists, telepathists, and other spiritualists of many colours, as well as anti-vivisectionists, anti-vaccinationists, and divers other persons whose only bond of union seems to be impatience or hatred of the scientific method of thought. One high duty, at least, of men whose life-work is to "search out the secrets of Nature" appears to be plain: To strive for the reform of education according to the dictates of science—*Hic labor, hoc opus est.* Even though all aims at the artificial improvement of the human germ be disappointed, we can truly and fruitfully educate our race by insisting on a thorough and enlightened study of Nature and her laws. We know at least that the unity of the universe is a scientific fact. "We are governed by physical laws which it is our duty, as scholars of Nature, to investigate; and by moral laws which it is our duty, as citizens of Nature, to obey."[12]

We are not without object-lessons of what intelligently directed education can achieve for a whole people even in one generation. To no germinal change can possibly be ascribed the recent development and marvellous transfiguration of Japan. Doubtless, indeed, we may sing with the matchless poet of humanity who was Harvey's contemporary, "What a piece of work is Man, how noble in reason, how infinite in faculty! In form and moving, how express and admirable; in apprehension how like a god!" But we can also endorse his further reflection:—

> "Sure He that made us with such large discourse,
> Looking before and after, gave us not
> That capability and god-like reason
> To fust in us unused."

Remarks
ON
THE ROYAL NAVY MEDICAL SERVICE.

Delivered at the Distribution of Prizes to Naval Medical Officers at Haslar Hospital on Oct. 7th, 1910,

BY ADMIRAL SIR JOHN DURNFORD, K.C.B.

GENTLEMEN,—I understand that on this occasion I am expected to say a few words, and in the first place, on behalf of those who have been good enough to attend this prize distribution and in my own name, let me offer our congratulations to the medical officers who have now successfully qualified for commissions in His Majesty's Navy. I can assure them of the high esteem in which the Naval Medical branch is held by the whole Service and also by those who control it. You have at a considerable pecuniary outlay selected a profession of great importance, and a responsibility devolves on you which is not surpassed and rarely equalled in any other calling. You will have to depend mainly on your own judgment and skill, to act promptly, generally without anyone to consult as to the steps to be taken. So far you are circumstanced as many of your professional brethren who practise on shore. But you, gentlemen, have undertaken a further responsibility, that of accepting a definite share in the defence of the Empire by joining His Majesty's Navy, a profession which is rightly and justly esteemed of incalculable importance, as the safety of the Empire depends on the strength and efficiency of its fleet. It should be your aim throughout your career, by careful study, research, and practice, to keep abreast of the times in your profession, and to maintain the *personnel* of the fleet in the highest state of physical fitness reasonably possible. You should remember that the prospect of ultimate success will be much greater if the occasional somewhat monotonous periods that occur during peace are spent in preparation for the supreme moment.

I have during my experience found the advice of the

[12] See Winwood Reade's Martyrdom of Man, p. 180.

medical officer of great value in the conduct of the Service. I have always considered him one of my most trusted advisers, and this confidence has never been misplaced. It is desirable that you should pay much attention to the training and advancement of the sick-berth staff on whom much depends. Encourage their attention to the sick, their industry and laudable ambition.

In the presence of so much medical and surgical talent who can better tell you, I find it difficult to offer you professional advice, and would therefore merely say that if you have a special leaning for medicine or for surgery, or any particular branch of either, by all means cultivate it, provided you can do so without interference with your excelling as a general practitioner. This proviso is necessary, for though we welcome a limited number of expert specialists, who devote their whole time to some particular branch, the bulk of the naval medical officers should be constantly working at all available subjects, both in medicine and surgery, as they have cases of all descriptions to deal with, and must be independent of outside expert assistance.

A matter of deep interest to the Naval Medical and Nursing Services, and one of very considerable importance to the nation, is the question of the provision and organisation of these services in peace and also in war, and whether any steps are considered necessary to render them more efficient. In short, whether we are reasonably and satisfactorily ready for emergencies. These questions have been carefully considered by a committee with which I have been connected. Our discussions extended over nine months. Besides sub-committee meetings to elaborate details, we held some 60 sittings and produced a unanimous report. I am glad of this opportunity to say how greatly our deliberations were assisted by officers of the Services and eminent members of the civil medical profession, who in response to requests gave us the benefit of their opinions, the outcome of long and valuable experience. It is not only the oral evidence I allude to, but also the carefully prepared papers and numerous letters received in reply to inquiries.

I should also like to mention the valuable advice afforded by the matron-in-chief of the Army Nursing Service, the senior head sister of the Naval Nursing Service, as well as similar authorities of the highest standing in civil life. Their assistance was of great value in considering H M. Queen Alexandra's Royal Naval Nursing Service, a service of such highly proved use in peace, and one on which a still greater reliance must be placed in war. The help and assistance from the St. John Ambulance authority were also most useful, and I must not forget to include also the Royal Naval Volunteer Reserve. The prompt and ready response from the home hospital authorities in the matter of furnishing information and statistics was of much assistance, and I am glad to express our thanks to the inspectors-general and officers of the hospitals for their share in this matter. Beyond the allusions made in Parliament by the First Lord of the Admiralty, it has not yet been possible to make public the recommendations which have been made, and you will not therefore expect me to go into them. I have good reason to hope, however, that having now been considered by the Admiralty, effect will be given to the committee's recommendations as soon as arrangements can be made.

May I say that though undoubtedly you will find some difficulties in a naval career, there is much to recommend it. You cannot fail to appreciate the associations, your work, and the opportunities and advantages incidental to a life of travel. You may not obtain the reward a Harley-street reputation sometimes carries with it, but if you persevere you will obtain the most satisfactory recognition a naval officer can aspire to: I mean the good opinion of the great silent sea service which, when merit is deserved, communicates its appreciation in no uncertain voice. This and the gratitude of the officers and men you serve, and sailors are not ungrateful, will, I trust, stimulate your zeal in what I hope you will find a satisfactory career.

In conclusion, I desire to express sincere thanks for the kind welcome you have given me. It is always a pleasure to visit this establishment, in which I have taken so great an interest, and I particularly appreciate the opportunity the Director-General and your Inspector-General have afforded me to meet old friends. I am confident Haslar will continue to maintain its high position in the future. You will all, I am sure, join with me in thanking the Commander-in-Chief and Lady Curzon-Howe for their kind attendance here this afternoon; their presence greatly enhances the situation, and is another proof of the kindly and affectionate interest in the *personnel* of the Service which they have always displayed throughout my old friend's distinguished and conspicuous career.

Abstracts
OF
INTRODUCTORY ADDRESSES, ETC.,
DELIVERED AT THE
Opening of the Medical Session 1910–11.

LONDON SCHOOL OF TROPICAL MEDICINE.

INTRODUCTORY ADDRESS ON "SCIENTIFIC OBSERVATION," DELIVERED BY H. A. MIERS, D.SC., F.R.S., PRINCIPAL OF THE UNIVERSITY OF LONDON.

Dr. MIERS, speaking as Principal of the University of London and disclaiming any personal knowledge of tropical medicine, began by pointing out that the coöperation of workers in different subjects, whether by advancing criticism or by direct collaboration, should be one of the most valuable and effective features in a university, and he considered that those working in their professions might more consistently and systematically take their problems to the universities for solution as places where there is, or should be, time and opportunity to carry out researches of which the practical outcome might not be at first evident. He instanced the microscopic study of rocks and metals, which has revolutionised geology and metallurgy, as studies which could not be taken up and pursued successfully in their initial stages by persons engaged in professional duties.

"If, however," he said, "the investigations at the universities are to be carried on by men who are subsequently to be leaders in their profession—and this is much to be desired—it is clear that there is the greatest need for such provision as will enable those who have completed their university course to stay on for one or two years engaged upon this work in the university laboratories before they become absorbed by their professional duties. If we are to maintain a high order of advanced work at the universities, and to supply the professions with men who have learnt to know the meaning and the method of such work while they are still able to learn, nothing can be more useful than scholarships and fellowships for advanced study and research which will enable students to remain for a post-graduate period. In the medical profession I am glad that opportunities are now being provided to an increasing extent; and foremost among these we have to acknowledge the great debt which the profession, and indeed the whole world, owes to Mr. Otto Beit for the noble benefaction which he instituted early in the present year in memory of his brother. I believe that that and similar schemes are destined to play a tremendous part in the intellectual advances and the professional development of our country; the universities in whose schools the Beit Fellows will carry on their researches will also receive a great impulse which will enable them to fulfil more adequately their duty to higher learning and investigation. I venture to hope that the London School of Tropical Medicine, a school whose energies are so largely devoted to special and advanced study, values its connexion with the University of London, and derives real and substantial benefit from an intimate association with the University."

Dr. Miers pointed out in conclusion that in the earlier days of scientific research the telescope and the microscope could be turned upon almost anything in the hope of discovering suggestive objects of inquiry where the trail could be followed into the unknown region, but under present conditions research is more concentrated upon a special line of investigation out of which arises the danger that those whose attention is too much fixed on one thing may fail to perceive others which are equally discernible and equally important. That those who expect too intently any phenomenon may actually see it or hear it though it be not there, he illustrated by the following story. "When the tropical annexe of the Crystal Palace was burnt down a large concourse of people witnessed the conflagration, attracted by the extraordinary spectacle of the streams of

molten glass. It was known that a number of animals, parrots, and monkeys were kept in that annexe and were burnt to death. One ape had escaped to the roof, where it clung for a long time, unable to escape, and was literally roasted to death before the eyes of the agonised spectators, who were not only witnesses of its contortions, but also heard the poor creature's screams. After the conflagration it was found that the object which had excited such interest and compassion was a piece of tarpaulin."

Dr. Miers then pointed out that the same defect belonged not only to the senses, but to the intelligence, as it frequently happened that an acute and eager mind became so obsessed by some idea, distorting the judgment, that the victim of it was led to explain everything in the light of the fixed idea, and to ignore other possibilities. "In fact," he said, "many of the mistakes of investigators are made in this way. Now, I do not venture to suggest that scientific men are often deceived by their senses to see and hear what does not really exist, or be blind and deaf to phenomena that play an important part in their experiments or observations, though I do think quite seriously that this may sometimes occur; but I wish to remind you of the danger that scientific training and experience may quite easily predispose both the senses and the mind to this weakness. So far from being a good training for mental receptivity and alertness of sense, so far from fitting the observer to notice and interpret every trivial detail that may have a significance, the training of scientific observation, both in the laboratory and in the field, unless wisely conducted and corrected, may easily unfit the student for this very purpose. In science, as elsewhere, familiarity may breed contempt for important details. He who is practised in a certain line of observation may, in proportion as his senses and his intelligence become more acute in the appreciation of the events or the objects for which he is watching with expectant attention, become less and less able to appreciate properly anything else. I speak from some experience, for I have noticed both in myself and many of my pupils this failing. A mineralogist like myself, although quick to notice in laboratory experiments on minerals and crystals the slightest indication of the result that he expects, so that he sees things that would not be visible to the untrained observer, and although quick in the field to notice the minutest specks of the mineral for which he is searching, specks which would not be discerned by the unpractised eye, may be in other respects a deplorably unobservant person and fail to see the most obvious things. How far may this be partly the result of cultivating observation of a special sort?"

From this Dr. Miers concluded that the faculty which is cultivated by much of our scientific training and work is not readiness and certainty of observation so much as specialised memory; taken as a whole, he did not think that scientific men are better general observers than other people; indeed, he was inclined to think that the senses of a boy might be better trained to detect minute and unexpected details by the practice of field sports than by the special practice of a laboratory. He concluded this suggestive address by pointing out the minuteness and special character of much of the work in tropical medicine, and by urging that those engaged upon it should exercise imagination in their studies and be ever on the alert to see new developments.

THE POST-GRADUATES' MEDICAL COLLEGE AND POLYCLINIC.

INTRODUCTORY ADDRESS ON THE "TEACHING OF INSANITY TO THE MEDICAL STUDENT AND PRACTITIONER IN RELATION TO THE PREVENTION OF MENTAL DISEASES," DELIVERED BY ROBERT JONES, M.D. LOND., SUPERINTENDENT TO THE CLAYBURY ASYLUM AND LECTURER ON MENTAL DISEASES AT ST. BARTHOLOMEW'S HOSPITAL.

Dr. JONES began by quoting a recently expressed view of the Lunacy Commissioners that the inexperience of medical men as to the requirements of the lunacy certificate is responsible for much danger to the community, as it leads to the presence in that community of uncontrolled and uncared-for mental defectives. With regard to the number of mental defectives among us he gave some very ominous statistics, pointing out that while there are 160,000 certified insane persons in Great Britain and Ireland there are probably nearly as many more showing some intellectual deficiency, while in the last 50 years the estimated population of England and Wales has increased by 83·7 per cent., but the number of persons certified as insane has increased by 255 per cent. Dr. Jones pointed out that many students still divided the diagnosis of mental diseases into raving or frenzied persons and drivelling idiots, but modern science enabled us to obtain much broader and better ideas of clinical types of insanity. Moreover, he said, it is now recognised that the study of psychology must be a necessary preliminary to the study of mental disease, but unfortunately it is a difficult and subtle subject which does not fascinate the average student, especially in England. "The study of psychology," he continued, "and especially of the period of childhood, is therefore superlatively necessary to discover changes in the personality, to interpret the meaning of undue shyness or seclusiveness, to mark changes in the normal instincts, the growth of anti-social tendencies, of abstraction, of fondness for the mythical and the weird, or of modifications in the faculty of attention, for all of these may eventually be revealed in some unexpected psychosis. We meet many examples of these in the cranks, singularities, eccentric and anomalous persons which constitute society; we know of agitators, dreamers, street orators, and so-called conscientious objectors. Some of these are only ill-balanced individuals, often intellectually bright, but with a lack of emotional stability, showing either exhilarated excitement or nervous despondency and apparently without sufficient cause. Others among them are moody and variable, with uncontrolled will power, unstable in purpose, easily persuaded and liable to undue suggestibility. To this class belong the 'ne'er-do-wells,' the moral delinquents, and many of the so-called 'unemployables.' No better description of these can be given than to term them constitutional neuropaths and psychopaths. They are asymmetrical persons with an excess or a diminution of some or all of the mental powers. They are known at petty sessions as habitual law-breakers, 'hooligans,' street-loafers of both sexes, inebriates, and recidivists; to the Poor-law authorities as pauper casuals or vagrants; and they constitute a large number of the asylum population. There is among them all a loss of moral control and proper mental balance, they are obsessed with a keen desire for immediate gratification at the expense of future benefit, and they are characterised by a complete lack of those altruistic virtues upon which depends the welfare of the State as well as of individuals and families. Last year there were over 200,000 cases of drunkenness dealt with in the various police courts, and there appears to be a steady rise in juvenile delinquency! The proportion of indictable offences was lower 15 years ago, and of non-indictable 50 years ago than to-day! The army of vagrants numbers from 70,000 to 80 000. There are always two millions of paupers in the United Kingdom, averaging 20 per 1000, and this not including lunatics in asylums (of which there are over 130,000 in England and Wales), casual paupers, and vagrants. The cost of this burden is a bar to national progress. The total cost of maintaining our insane population is over 3½ millions, and this not including the cost of the inspecting officials with their staff. The cost of paupers is over 17 millions a year. In 1856–57 the cost of pauperism in Poor-law institutions was £16 per head. In 1906–07 it had risen to £29 per head—an increase of 76 per cent. Excluding the cost of the paid justiciary, we pay a million a year for our inebriate reformatories, our local and convict prisons, truant and industrial schools. Add to this the annual cost of our criminal population, including the net cost of the police, which is over 5½ millions, and we have a total of 6½ millions, annually spent upon our law-breakers, many of whom, as stated, are mental defectives. Surely a case is made out for investigating psychologically and sociologically the causes of mental disorders which are correctly defined as the 'bankruptcy of reason,' being the most melancholy and grievous of human afflictions, and also a blot upon our civilisation."

Dr. Jones proceeded to consider the reasons for believing that physical betterment is also an intellectual gain, and deplored the occurrence amongst us of reckless and unsuitable marriages and the general blindness to the evil results of alcoholism and sexual laxity. But he admitted that one of the results of the progress of civilisation must be a multiplicity of mental defectives, inasmuch as when life increases

in complexity there will be an increased liability to breakdown on the part of nervous and mental machinery. The responsibility of the medical man was therefore a grave and growing one in relation to mental defect; "he must be able to understand men, matters, and things," and be ready to give opinions based upon an intimate acquaintance with biological laws and the principles of heredity. The study of sociology he considered to be as necessary to the study of mental diseases as that of physiology is to the pathologist. "One of the chief reasons," he said, "why the medical student and practitioner should be familiar with these ancillary studies is that mental defect is best and most successfully treated in its early stages, and its recognition in this stage becomes therefore of superlative importance. The earlier that cases of mental disorder come under treatment the higher is the percentage of recovery, and the chances of recovery diminish progressively and considerably as the time before commencing treatment increases in duration. The successful treatment of all nervous and mental disorders means attacking them in the incipient stages; the stages of insomnia, of distracted attention, of sleeplessness, of reverie, or of capricious appetite. Gross mental decadence is associated with great neuronal changes, and analogy supports the belief that functional disturbances are attended by slight neuronal changes. It is therefore within the limits of possibility that these may be initiated by mental causes, and as cells are composed of granules of chemical substances which are not themselves alive, but whose activity determines the direction and arrangement of life processes, so the medical man, by a timely suggestion or by duly considered advice, may cause a change to occur in the working units of the cortical cells, thus arresting disease and opening the storehouses of accumulated energy, diverting their forces along normal channels. ..... I have shown how important is the study of brain functions and how these concern the biologist, the chemist, the physiologist, and pathologist, and I have enumerated the sciences which assist in the elucidation of mental disorders. To enable the student to grasp this difficult study, it is generally agreed that the different forms of insanity should be described in a systematic course and each lecture alternated with clinical pictures, illustrative of the theoretical course. The student should be encouraged to come into actual contact with cases by filling up and signing certificates and making himself familiar with the different forms for receiving and detaining cases of insanity whilst under treatment; cases such as those which come up for re-certification, and recent admissions, and he should also be permitted to watch the treatment, medical and moral, of actual cases. The course should be interrupted by microscopic and gross pathological demonstrations of diseased findings of the brain and other organs, and these contrasted with the normal state."

Dr. Jones concluded a serious and practical address by outlining what is being done in the different divisions of the United Kingdom for the prevention and treatment of mental disease. In Scotland he said that psychiatry has been more widely recognised than in any other part of the three kingdoms; in Ireland the teaching was mainly clinical; while in England lectureships were attached to the various medical schools and attendance at these and in the asylums is compulsory. But he pointed out that there is no special recognition of mental disease as a subject worthy of a diploma by the examining bodies.

THE WEST LONDON POST-GRADUATE COLLEGE.

INTRODUCTORY ADDRESS ON "SPECIALISM IN MEDICINE," DELIVERED BY DONALD W. C. HOOD, M.D. CANTAB., F.R.C.P. LOND., CONSULTING PHYSICIAN TO THE WEST LONDON HOSPITAL.

Dr. HOOD, after expressing on behalf of everyone present their deep regret at the death of Mr. C. B. Keetley, proceeded to point out in incontrovertible terms the necessity which nowadays exists for post-graduate teaching, alluding at the same time to the fact that not only the taught but the teachers obtained the greatest possible benefit from such courses of demonstrations as were given in the wards of the West London Hospital.

"We often," he said, "have with us those who come from all quarters of the globe, and they bring information and experience of those various tropical diseases with which we physicians are but poorly acquainted. Personally I shall always owe a debt of gratitude to many who have been my companions in my visits to the hospital, and who have so often aided my investigations by bringing their special knowledge to our mutual benefit. Abroad in various climes the practitioner is in daily touch with affections of the blood, liver, or spleen but rarely met with here, and thus in many instances of abnormal symptoms or irregular course of disease we may, by a comparative study, obtain a better insight into the disease process, and possibly we may be able to bridge over the gap or supply that missing link which has been wanting, and which may enable us to make a correct diagnosis, otherwise impossible. The far-reaching effect of malaria conditions with its often perplexing sequelæ may be of daily occurrence in the life of many a graduate, and may permit his making a certain diagnosis which to those less experienced is but a guess."

At this point Dr. Hood quoted Huxley's apprehension lest science should be crushed by the weight of the gifts which she demanded from nature. There was a time, said Huxley, when men of science would aspire to the possession of an all-round acquaintance with natural history, but nowadays specialism is the leading characteristic of science and is becoming more and more embarrassing. What Huxley said 20 years ago of natural science as a whole Dr. Hood found to hold true now of medicine. "One of the most remarkable changes," he said, "which has taken place in medicine both with regard to its scientific and practical side has been the enormous increase in specialisation. It is worthy of a moment's thought and reflection as to whether this is all 'real gold,' and whether the extreme specialisation of matters connected with pure medicine, as it is called, is of benefit to the common weal. Extreme specialisation in medicine is a growth of about the last 25 years, and attention may be said to have been called to the fact at that time in an article by the late Morell Mackenzie which will be found in the *Fortnightly Review* for 1885. ..... There can be no doubt that some of our principal centres of medical education were slow in recognising the importance of providing their students with the means and opportunity for acquiring special information and dexterity in the use of special instruments for research and inquiry. It is only common sense that with the enormous increase in knowledge of both surgery and medicine the ordinary practitioner, whether he be surgeon, physician, or engaged in general medicine, cannot be armed at all points. Specialism properly regulated is a necessary corollary to increased, and rapidly increasing, knowledge of every branch of professional life. We all recognise the obvious truth, and our hospitals one and all maintain the principle in forming those special departments which add so vastly to their general utility, and which, as I have already remarked, you will do wisely in following the practice and technique. But there is a material difference in connexion with the special department of a hospital with its carefully-selected professors, and that of specialism as considered by a large proportion of the public. In hospital the special department is fed, maintained by skilled—if I may use the word—purveyors. There would be, I am afraid, a sad miscarriage of good if the selection of appropriate cases were left entirely in the hands of a hospital porter. Those of us who have had charge of wards appreciate to the full the advantages which result from our being able at any moment of day or night to call upon one of our colleagues who may have made special study of any case in which the complicated, unusual, anomalous symptoms are difficult of interpretation—cases in which some special symptom or congeries of symptoms lead us to wish for more detailed knowledge than we ourselves possess. The same holds good in our private work, and we are all grateful for those who frequently place at our disposal that special, peculiar knowledge which may enable us to substantiate our diagnosis, throw more light on the conflicting testimony of physical signs and symptoms, and so lead us to a more successful treatment of the sufferer we are called upon to advise. The seed of specialism is rich and good, and if only sown on appropriate soil must bear fruit a hundred-fold, and a bounteous harvest will follow in due course if only specialism be regulated by those who, by reason of their knowledge, are able to appreciate its advantages and limitations."

Dr. Hood proceeded to demonstrate that the abuses of specialism came from the misunderstanding of the public of

the limitations of medicine and their apparent desire to be treated by the charlatan rather than by the physician. He ridiculed in vigorous language certain popular crazes in therapeutics, and quoted the late Sir William Gull as one who never felt himself sufficiently well informed in general medical knowledge to become a specialist. The public, said Dr. Hood, took a very different view from Gull, considering that it is essential to their proper treatment that a limited and often prejudiced view should be taken of their symptoms, in proof of which he gave a typical sketch of the behaviour of a patient with Bright's disease who flies from neurologist to dermatologist, from dermatologist to ophthalmologist, and so on, frequently failing to consult the man who has made diseases of the kidneys his particular study. He closed his interesting address by saying: "Ill-regulated specialism, then, must always lead to the danger of routine treatment, and no better example could be cited than that of the treatment of disease of the heart. I know no organ which has been so unkindly dealt with. Whatever the character or form of disease, whether valve, muscle, fibrous tissue, as in pericardium, or nerve, or functional weakness, whether suffering from toxic conditions as seen with tobacco or influenza, whether showing signs of weakened, failing circulation as in angina, one and all they have been subjected to the same routine course. Why, I ask, do our heart cases do so well in hospital? Mainly from the fact that in treatment we use common-sense principles, looking upon rest in bed as being our sheet-anchor in a vast proportion of cases, and we do not send our patients to Nauheim. 'Has not rest been tried?' said one of our most distinguished physicians to a patient suffering from mitral disease, who had been subjected to every special form of treatment minus the one most essential and necessary. The more deeply we probe into the recesses of the human economy the wider our knowledge and scope of medicine, the more we shall be impressed by the fact that a healthy specialism can only be grafted on to some one or other form of the parent stock, that being clinical medicine. Specialism of a narrow order must invariably lead to faulty diagnosis and therefore faulty treatment. It does much to promote that evil we all so much deplore, the growth and vigour of all sorts and kinds of unqualified irregular practice. We may not at the moment have a Cagliostro in our midst, but there are hundreds who run that eclectic practitioner, that profound student of human credulity, very close."

THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

PRESIDENTIAL ADDRESS ON "SPECIALISTS AND SPECIALISM," DELIVERED AT THE COMMENCEMENT OF THE SESSION BY PHINEAS S. ABRAHAM, M.D. DUB., F.R.C.S. IREL., DERMATOLOGIST TO THE WEST LONDON HOSPITAL, AND LECTURER ON DISEASES OF THE SKIN TO THE POST-GRADUATE COLLEGE.

[Dr. ABRAHAM, after expressing his high appreciation of the great honour which his election as President of the society had conferred upon him, said that not many years ago specialists and specialisms in the medical profession were not held in very high esteem in this country. Continuing, he said:—]

I think I am not far wrong in saying that until some 40 years ago most hospital surgeons considered themselves competent to perform any and every operation upon any and every organ of the body, and that every physician thought himself able to treat any and every possible disease. But science has advanced so rapidly in the last few decades that in these days he would indeed be a bold man who pretended to be an expert in every department of medicine and surgery, or tried to pose as a universal specialist. The growth of genuine specialism has been gradual, and it is still going on. Many a man who would deprecate being called a "specialist" is really one, or at any rate is being forced virtually to become one. In the course of his work his attention may be directed to some particular class of disease or operation. He learns all there is to be learnt about it, and perhaps adds something to the existing knowledge. He widens his experience with similar cases, and by degrees gets the reputation of being an authority on that particular subject. As is only natural, the general public will go to the man who has, or is supposed to have, the largest experience of the particular affection from which they suffer, and his brother practitioners also will seek his assistance and advice in cases upon which he has become an authority. Sooner or later he may find himself doing little or nothing outside of that special area, and he has indeed developed into a veritable "specialist," whether he likes to be called one or not. Most of the great specialists have thus been gradually evolved. Legitimate specialists, however, are not only made in that way; some go in for special work malice prepense—from natural inclination or from some other particular reason. But the wiser men of this class—in this country, at all events—do not "rush in" without a good general foundation or unless after long special study. In my opinion, the best equipped specialists in dermatology as well as in every other special department are those who have not only acquired a sound practical knowledge of general pathology and of the other subjects of the student's curriculum, but have also gained before attempting to specialise at least a few years' experience in the general practice of the profession. A man may afterwards work in the special department of his own or some other hospital, and I would advise him to attend the clinics of as many teachers of the branch he has chosen as he can, both in this country and abroad.

[Dr. Abraham then pointed out the harm that was done to "specialism" by the medical man, who with no particular special study and with no extensive experience of a subject suddenly decided to become a specialist. It was men of this class, he said, who were more prone to lend themselves to vulgar advertisement and to ignore the ethics of the profession in other directions. He continued:—]

It has been recently said that in the near future there will be nothing but specialists, hospital physicians and surgeons, and medical men in the Government services; in other words, that there will be no place for the general practitioner as we know him to-day. I believe that such a state of affairs is not likely to come to pass, for it would not only be detrimental to the profession in general but a serious loss to the public at large. The family doctor—the medical "guide, philosopher, and friend" of the household—will always be, I maintain, an important and, indeed, indispensable element in the medical world. With the more thorough education that is now at his disposal, and with his daily advancing knowledge, his patients will be less likely to leave him and independently seek the advice of the consultant and specialist, as some no doubt do at present. It is his function to advise in and treat all cases that he really understands and can adequately deal with; but I venture to think that in the long run he is well advised in obtaining assistance from experienced experts in cases which he is not sure of, or which are beyond his knowledge. It is true that many of the general public still imagine that if the "doctor" does not know everything in medicine and surgery, and honestly professes his ignorance, he cannot be a good doctor, or "clever," as they call it; but the laity are gradually becoming more enlightened in these matters, and are now more able to appreciate them in their true proportion than they could a few years ago. I know that some practitioners avoid consultations as far as they can, because after a consultation they occasionally lose their patient and see him no more; and it is possible that certain consultants and specialists have little hesitation in quietly appropriating such patients and regarding them as their own for the future. I am sure, however, that an honourable consultant or specialist does not knowingly act in that manner, and that if a patient who has been brought or sent to him by a brother practitioner comes again independently he informs the practitioner and tries to send the patient back. If this rule is occasionally broken by reputable men it can only be by inadvertence or forgetfulness. The friction which may thus sometimes occur between general practitioners and consultants would, I am sure, be lessened, or be, indeed, non-existent, if only we acted generously—in fact, as gentlemen—and remembered the old adage, "Live and let live."

In a recent correspondence which has appeared on this subject it has been suggested that no specialist or consultant should ever see a patient unless accompanied, or sent, by a general practitioner, and that no general practitioner should have anything to do with a specialist or consultant who sees patients independently. I am afraid that this idea must be regarded as a "counsel of perfection" and not practicable. We must not forget that there is still a certain amount of

freedom in this country and that the lay public also have their rights.

In conclusion Dr. Abraham said: "It must be admitted that at the present day advances in our knowledge of disease are more likely to be made—and are, indeed, being chiefly accomplished—by men who devote themselves to the study of particular subjects, than by those whose time and energies are fully employed in the routine of general practice. At the same time I am sure that every general practitioner must frequently in the course of his work meet with facts of interest or of novelty which ought to be recorded. I wish, indeed, that every member of our profession could always afford the time, and would more often take the trouble, to accurately report every circumstance that appears to him unusual in the course of the disease he is treating. Much valuable knowledge could probably be thus added to medical science, which is now 'bottled up,' so to speak, in the brain of the general practitioner.

One of the great objects of our late friend Mr. Keetley, and of those who were associated with him in the foundation of this society, was to afford the opportunity to the medical practitioners of the neighbourhood, and to the staff of the West London Hospital, to meet together, compare notes, learn from each other, and conjointly to advance medical and surgical knowledge. No one can say that the society has hitherto failed in this respect. May we continue to proceed on these lines, and I trust that this session which is now beginning will be not less fruitful than those which have gone before."

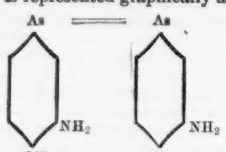
FURTHER EXPERIENCES WITH "606" (80 CASES).[1]

BY J. E. R. McDONAGH, F.R.C.S. ENG.,
SURGEON TO OUT-PATIENTS AT THE LONDON LOCK HOSPITALS.

BEFORE relating my further experiences with "606" a few words will not come amiss describing the *rationale* and the steps taken before a drug was discovered which, on the one hand, would kill the organisms in protozoal diseases, and, on the other, be non-toxic in that dose which would bring about their complete destruction—in other words, the action must be parasitotropic without being organotropic.

Experiments were first carried out with trypanosomes, and after several thousands of chemical substances had been tried with a view of discovering whether fixation of the organisms was possible, it was found that those having this power fell into three groups: (1) Arsenic and antimony; (2) azodyes—e.g., trypanrot, trypanblau, and trypanviolet; and (3) basic triphenylmethane dyes—e.g., parafuchsin, methyl-violet, and pyronin.

With pyronin, for instance, it was possible to produce a specific immunity in trypanosomes against the group to which it belonged, but not against a substance in groups 1 and 2. The chemotherapeutic action was studied by mixing trypanosomes with corresponding substances and observing microscopically their cessation of movements and swelling, and also *in vivo*, e.g., by gauging the curative action on infected animals. In this way a substance was found to have the power of killing spirilla of recurrent fever in as weak a dilution as 1 : 6,000,000; *in vivo* the effects were equally remarkable not only in combating the diseases due to spirilla, but also those caused by spirochætæ and trypanosomes, without being non-toxic in that dose which was able to bring about their complete destruction in 24 hours and after a single injection; this preparation was a dioxydiamidoarsenobenzol, or, as it is now popularly called, "606." The formula of "606" is represented graphically as follows:—



Atoxyl differs considerably from "606," since it is not potent except *in vivo*, as its action depends upon a reduction product, para-aminophenylarsenoxyd, and in the reduction the arsenic molecule becomes changed in such a way that all cannot be fixed, consequently people possessing a natural sensitiveness to arsenic might become poisoned by that portion which remained unfixed; and this is what actually happened. Further, several doses of atoxyl are required to one of "606." Before the drug was put upon the market Ehrlich drew attention to this possibility, and showed that it might be avoided by testing the patient's sensitiveness by means of either a Calmette or a von Pirquet's reaction with the drug before use; and those giving a positive reaction regarded as unsuitable for treatment.

Owing to the difficulty of using a solution of "606" for test purposes, I advocated arsacetin—a known toxic preparation. After testing several patients only two gave a positive reaction; both cases had been treated for some time with soamin, and not infrequently after an injection a red, painful induration formed at the site of injection, analogous to the intradermal reaction with tuberculin. Both patients received an injection of "606," and although ill for a few days responded remarkably, and as one had double optic neuritis which did not go on to atrophy, any test beforehand might be regarded as unnecessary.

Owing to the enterprise of other chemical manufacturers drugs similar to atoxyl were advertised as harmless and were used indiscriminately with sporadic disastrous results, for which Ehrlich was blamed. Therefore, it is scarcely to be wondered at that Ehrlich should take every precaution in limiting the use of this new preparation "606" to a few whom he could trust to test its efficiency and gauge its indications and contra-indications.

Both atoxyl and arsacetin have been largely employed in the treatment of psoriasis and lichen planus, and no harmful sequelæ have supervened—rather what one would expect, since the reduction does not seem to occur unless some protozoal disease is present to bring it about. "606" has also been tried in cases of psoriasis, lichen planus, and leukæmia without any great benefit arising therefrom.

Some of the preparations which fall into the three groups and which have a destructive action on the organisms *in vivo* do not destroy the same in a test-tube, but only inhibit their multiplication. For instance, Busk showed that paramecia could live for weeks in a solution of trypanrot, but were completely unable to propagate themselves.

Another action which some of the arsenical compounds possess is to kill some of the organisms, which results in the production of antibodies, which destroy the remainder.

The best results of cure obtained are, naturally, when the disease is at its height, when the body is saturated, so to speak, with the specific organisms, since the formation of antibodies may play even a greater part in causing their complete dissolution than the direct destruction of a few, and in these very potent preparations the smallest dose possible may suffice.

In the treatment of syphilis with "606" I have found that a much bigger dose is required to heal an early chancre than to cure completely a case of extensive gummatous ulceration, for instance, in a congenital syphilitic; therefore one is justified in assuming that the cure is largely due to the amount of antitoxin formed—a further proof of which the following is an excellent example.

If a mother after giving birth to a syphilitic infant be injected with "606," all the syphilitic manifestations in the infant disappear within a week after it is put to the mother's breast. The improvement is not due to the amount of arsenic the child receives, since none is found in the milk; it must, therefore, be due to the antitoxin produced in the mother by the death of her spirochætæ, and which is conveyed by means of the milk to the child. This fact is of considerable importance, since the risk of death in an infant injected with the smallest possible dose of "606" is enormous, owing to the amount of endotoxin formed. We do not yet know whether the cure obtained in a child in the way described is a permanent one, and Ehrlich's advice at present is to give the child an injection later, when it is in a healthier condition. Curiously enough, some of the dyes—methylene blue, for example—have a contrary action; they cause a tremendous increase of the parasites instead of destroying them, since their action is more organotropic than parasitotropic. Another factor not to be forgotten is, that after a single injection the protozoa may become immune to a further injection; that this is the rule with all the arsenical compounds is by no means the case, since patients who have had

[1] See THE LANCET, Sept. 3rd, 1910, p. 711.

a course of atoxyl or arsacetin respond equally well to an injection of "606."

In cases which have recurred owing to the initial dose of "606" being too small, it yet awaits to be seen whether a second injection will retain its equivalent action; protozoa do become immune to arsenic, so it is quite likely that even a larger second injection may fail to cure the disease. It is most important, then, to put the dosage on a sound basis, and experience has already shown that the doses first employed were too small. Two of my early cases recurred, and both received a second injection, which has fortunately been able to heal the local lesions; whether a cure has been produced it is yet impossible to say. The improvement following the second injection, although the dose was larger, was not nearly as quick as after the first, and I doubt whether it is going to be permanent; such being the case, it is foolish to give a third or more injections, one must then fall back on mercury. An adult should not receive less than 0·5 grm., 0·6, 0·7, and 0·8 grm. are quite safe; in fact, these are the doses which Professor Ehrlich has recently sent me.

The procedure of the modern chemotherapy, which has in innumerable animal experiments succeeded with one fell swoop in curing the severest of infections, is exactly analogous to that of surgery, which with one operation is capable of eradicating a disease; in both the instruments employed carry with them some slight degree of danger. As Ehrlich aptly says, surgery owns her success not to the principle of *primum ne noceas*, but to *primum ut profiteas*, and when from animal experiments we are sure that a true cure has been obtained, surely it is better to run the slightest risk than to deprive all of its benefit. One has only to see cases of malignant syphilis going rapidly downhill, uninfluenced by mercury and developing phthisis, improve in a fortnight beyond recognition, practically saved from death, to realise what this means. As the surgeon can discriminate between those suitable for a certain operation and those not, so will those with whom "606" has been entrusted be able to lay down definitely the indications and contra-indications for treatment.

Since my last communication I have tried injecting the drug in every possible form, and as regards the future course of the disease what form employed matters little provided the medium is an alkaline one. Since the pain in a nearly neutralised medium is so much less than in a strongly alkaline one, I always prefer to almost neutralise my solution, and as the bulk adds greatly to the pain, I am now able to produce an emulsion of not more than 6 cubic centimetres, and instead of injecting into the glutæi, I now inject under the trapezius on a line with the spine of the scapula, and midway between the scapula and the vertebral column, on the left side in right-handed individuals, and *vice versâ*. Injections into the glutæi necessitate the patient's lying in bed, and since the pain is often worse in this position than when standing up, patients begin to walk about the room on the second and third day, when all of a sudden they are seized with severe sciatica which may keep them bedridden for as long as three weeks, probably due to the gravitation of the injection mass downwards on to the sciatic nerve; and, further, early movements increase the local inflammatory reaction, so that a large swelling almost invariably forms, and it is not till this swelling has almost disappeared that the sciatica abates. Injecting into the shoulder one is below the brachial plexus, so there is no radiating pain down the arm and only a very occasional shooting pain down the back and up to the head. Not infrequently, immediately after an injection into the shoulder, especially in plethoric individuals, there is great difficulty in breathing owing to a spasm of the intercostal muscles on that side; this difficulty in breathing, which may be accompanied by coughing, does not usually last longer than a quarter of an hour, and in only one of my cases did the patient get a little blue; and as in this case the difficulty in breathing persisted for some time and pleurisy developed, I now always inject emphysematous patients in the glutæi.

The method I now employ of preparing the solution is first to rub the powder up in a mortar with 1 cubic centimetre of a saturated solution of sodium hydrate, adding to this 3 to 4 cubic centimetres of very hot water, then 3 drops of the standard alcoholic solution of phenolphthalein, and just enough glacial acetic acid till a fine yellow emulsion is formed, and finally a drop or two of the sodium hydrate solution until the emulsion is of a rose-pink colour on adding another drop of phenolphthalein. The emulsion is best prepared by the bedside.

Kromayer is now injecting the powder in liquid paraffin, and depends upon the alkalinity of the blood in producing a mono- or bi-sodium salt. Such a preparation is painless, but whether equally efficacious I cannot say.

Prophylaxis.—As a prophylactic the drug is powerless, since its constituents are not broken up unless acted upon by protozoa, but be syphilis diagnosed as early as it is possible to do, after a single injection of 0·5 to 0·6 gramme the spirochætæ can be made to disappear within 48 hours and no further manifestations of the disease appear.

Primary stage.—In no case which I have so far injected, where a chancre alone was present, have secondary symptoms developed, and those cases which gave a negative Wassermann's reaction before the injection remained negative with the exception of some which gave a positive afterwards, but all are negative at the time of writing.

CASE 1.—A Japanese, aged 26 years, came to the Lock Hospital with seven chancres on his penis and inguinal adenitis. The patient received an injection of 0·5 gramme into his shoulder and was sent home. When he came up a week later the chancres had completely healed, but the glands were larger. Eight days later still not a trace remained of the initial lesions, and the glands had returned to their normal size. In several cases I have noticed this enlargement of the glands after the injection, but the increase in size is not permanent.

The following is an interesting case complicated by sepsis, which abated after the injection.

CASE 2.—The patient, 35 years of age, developed a chancre in January, 1910. The sore became phagedænic and when the patient was admitted to hospital in July the penis had almost disappeared, the urethra opening under it as a separate structure; there were also two offensive ulcers above the pubis. Owing to the extreme septic condition an injection of "606" was given to see if it would have any influence in checking its further course. Seven days after the injection the condition ceased to spread, and 14 days later the ulcers had cicatrised and the stump of the penis had completely healed.

Owing to the great difficulty of admitting every patient I have treated many as out-patients, but this procedure does not commend itself, as they will not rest for a few days, with the result that a large lump forms at the seat of injection which gives rise to considerable pain and takes some weeks to disappear. A patient should keep as quiet as possible for at least four days.

Secondary stage.—It is the rule for all the symptoms to disappear after a single injection of from 0·5 to 0 6 gramme. Very rarely the rash is temporarily increased in severity analogous to the Jarisch-Herxheimer sign, which so frequently occurs when a patient is first put on a course of mercurial inunctions; the interpretation of such is that the dose given was too small and those cases reported did not receive more than 0·3 gramme.

CASE 3.—A man, aged 22 years, came for treatment with a urethral chancre, polyadenitis, and a diffuse macular papular rash. An injection of 0·5 gramme was given and within a week all signs of the disease had disappeared except for an increase in the enlargement of the inguinal glands, which have since gone back to their original size. Ten days after the injection Wassermann's reaction was positive; in fact, the serum had the power of fixing more complement than it did before the injection was given. On Sept. 29th Wassermann's reaction was just positive; the amount of complement fixed was less.

The most striking results so far obtained in the [illegible] period have been in cases of malignant syphilis of [illegible] following is an excellent example.

CASE 4.—A man, aged 32 years, contracted syphilis in April, 1910, and as soon as the nature of the sore had been ascertained he was put under mercurial inunctions (ung. hydr. oleatis ʒi. nocte) and took hydr. c. cret. internally. A rash then appeared, but the patient did well under treatment for two months, when stomatitis, ulceration of the pharynx, and gummata of the skin and scalp developed, which tended to get worse the further mercury and iodides were pushed. The patient was so weak from dysphagia and anæmia, having lost 2 stones in two months, that he was admitted into the West London Hospital under the care of Dr. H. Pritchard,

to whom I am indebted for notes of the case, and received an injection of "606." Two days after the injection the throat was not so sore and on the third day there was no difficulty in swallowing, and the sores on the body showed marked signs of healing. Within a week the mouth and throat were normal, and within a fortnight every gumma had cicatrised, and the patient remarked that he had never felt better in his life.

Another case of malignant syphilis was essentially the same as the last except that there was an additional complication of pulmonary tuberculosis. After an injection the patient's cough subsided, there were no more night sweats, and although the physical signs were still present they did not appear to be so obvious.

Perhaps the most resistant syphilide to mercurial treatment is the small recurrent papular syphilide, or the lichen syphiliticus, of which the following case provides a good example.

CASE 5.—The patient, a woman, aged 38 years, was admitted, under the care of Dr. P. Abraham, to have an injection of "606," which she received (0·6 gramme) on Sept. 3rd, for a lichen syphiliticus on the face and other parts of the body, which had persisted for 15 months, and in spite of continuous treatment had never improved. On the third day the patient had delirium tremens; she had never had an attack before, but she was an alcoholic, and was under the influence of alcohol when admitted into the hospital. In a short time the patient recovered and the syphilitic lesions completely disappeared, leaving only slight pigmentation behind. Just as the patient was going to be discharged she developed erysipelas on the forehead from a case in the same ward; as a result of the rise of temperature her mental balance again became affected, but regained itself when the temperature fell. The patient has now quite recovered, is fully *compos mentis*, and it is scarcely to be believed that she had had a most stubborn syphilide on her face only a fortnight ago.

In no stage of syphilis is the action more apparent than in the tertiary, when the patients are usually very run down; a few hours after the injection the symptoms begin to subside, and within a week not only have the lesions healed or disappeared, but the patient's general condition is also markedly improved. Three cases I have had of women unable to work for two or more years who returned in three weeks, and, as one said, "feeling 10 years younger."

I have been struck by a group of symptoms which, for want of a better name, I will call vascular, and which a patient does not usually complain of, but the disappearance of which he calls one's first attention to after the injection. These subjective symptoms are præcordial pain and "heaviness," palpitations, irregularity of the heart beat—in short, a pseudo-angina; probably dependent upon an endarteritis of the small vessels. So constant are these symptoms that they should prove of great value in diagnosis.

CASE 6.—The patient was a housewife, aged 23 years. The date of infection was not quite clear, but there had been four pregnancies with evidences of syphilis. She came for treatment a year ago with a sore-throat and difficulty in speaking and swallowing solids. She was under the care of Dr. H. J. Davis, who very kindly asked me to give her an injection. The diagnosis of syphilis was unmistakeable, there was ulceration of the pharynx, the larynx, and the posterior nares; the uvula and part of the soft palate had gone. For one year the patient was treated with anti-syphilitic remedies without avail; her general condition became so bad, and the ulceration tended to advance, that she received as an out-patient 0·5 gramme in an emulsion of 6 cubic centimetres which I injected under the left trapezius. For the three or four days the patient was extremely ill, had fever, and sweated profusely. The further course will best explained from a letter I received seven days later:—

> For 12 long months I could not eat anything solid, and even found it difficult to swallow liquids. But a few hours after your injection I found relief, much to my delight. Although it is only a week since you did it I feel a new woman and can eat almost anything.

The improvement in her general condition was really remarkable, her speech was no longer a whisper, and the ulceration had completely healed 11 days after the injection.

CASE 7.—The patient, aged 42 years, a housewife, was admitted with gummatous ulceration and elephantiasis of the left leg, the condition having been gradually getting worse since 1908. Syphilis was contracted in 1904. For this case I am indebted to Dr. H. G. Adamson. The affected leg was red and swollen from below the knee to the ankle-joint, there were several scars from old gummata and ten recent septic ulcers and a few abscesses filled with pus, which were just on the point of breaking down. The circumference in the thickest part was 12 inches. The ankle-joint was swollen and too painful to move, the patient could not bear pressure on the leg, and the pain was very acute when standing on it. The patient's general condition was not good, she was anæmic, felt ill, and had no appetite—in fact, looked as if she was under the influence of septic poisoning. On August 18th the patient received in the glutæi 0·4 gramme in an emulsion; the next night the temperature rose to 101·4° F., and the pulse-rate increased to 104; two days later both the temperature and pulse were normal. There was a slight trace of albumin after the injection. On the 21st the circumference of the leg had diminished by half an inch; the ulcers were quite clean and commencing to granulate, and the patient could move the ankle-joint. No albumin was present. On the 23rd the ulcers had healed. The leg measured 11 inches. The patient got up, and was able to put the foot to the ground without it causing any pain. On the 26th the leg measured 10¾ inches. The skin had regained its normal colour, there was no pain, the abscesses referred to above had aborted without discharging their pus, and the patient declared that she had never felt so well in her life.

Beyond the great improvement in the general condition the most important point in this case was the way in which the septic material, pus, &c., had disappeared without any supplementary treatment. On Sept. 15th Wassermann's reaction was negative.

The next case is one of extreme interest, as the patient was suffering from syphilitic meningitis and had double optic neuritis; the case was very kindly sent to me by Mr. A. W. Hare of Newquay, and for the notes of the condition before injection I am indebted to Dr. F. E. Batten who kindly saw the case with me.

CASE 8.—The patient, a man, aged 40 years, developed syphilis 11 years ago, but had no secondaries, and only took mercury internally for six months. In 1908 gummata developed in the skin and some of the cranial nerves became involved. Some improvement was obtained after several injections of soamin and potassium iodide internally. In January, 1910, the patient had diplopia, and was much troubled with headache and vomiting. In March he first noticed weakness of the right side of the face, and was treated with mercury and iodide, with only temporary improvement. When seen on Sept. 12th the condition was as follows: "There is an internal strabismus with diplopia due to paralysis of the right external rectus and weakness of the left external rectus. The movements of the eye dependent on the third nerve are good. The pupils react well and the vision is good. There is some swelling of both optic discs. There is paralysis of the right side of the face and both motor and sensory portions of the right fifth are involved. There is deafness on the right side, but the tuning-fork is audible when placed in contact with the mastoid. There is some unsteadiness in gait, but this would seem to be dependent on the diplopia. There is no rombergism and no weakness of the limbs. The knee-jerks are active and equal; the plantars could not be obtained, and the abdominal were difficult to obtain, but were equal. The articulation is somewhat nasal, but no weakness of the palate can be detected, although there is some difficulty in deglutition. The movements of the tongue are good. It seems probable that there is a circumscribed syphilitic meningitis at the base of the brain involving the right fifth, sixth, and seventh cranial nerves, and probably also the right eighth and ninth and the left sixth to a lesser degree. There is no evidence of any affection of the pyramidal tracts." The arsacetin reaction was positive and the patient stated that it was not uncommon to get a local red, painful hard swelling after a soamin injection. An injection of 0·5 gramme of "606" was given. The patient was very ill for a few days, but on the third day the temperature returned to normal and he declared that his hearing had improved. Within a week he could walk without a stick, all the affected nerves had regained some of their power, the improvement in the sixth and seventh being very striking. The injection was given on Sept. 12th and on the 28th I received the following letter from Mr. Hare:—

> Optic neuritis is still present, but the patient says his visual power has improved daily, especially during the last four or five days. The

third, fourth, fifth, sixth, and seventh nerves all show signs of improvement in function, but I cannot find any increase of hearing on the right side, though the patient says there is. Swallowing, respiration, and heart's action all improved. To-day the heart beat was perfectly regular at 78, whereas I have often found marked irregularity both as regards rate and strength. I am very glad you have so successfully carried out the treatment and I must congratulate you on its probable successful issue, as I think there could hardly be worse cases than this to test the treatment upon.

Another letter, dated Oct. 12th, states that the optic neuritis has almost gone, eyesight greatly improved, and that the patient can walk 100 yards without staggering. The hearing has also greatly improved.

I am glad that Mr. Hare drew attention to the improvement of the heart's action, since several patients have of their own accord drawn my attention to the disappearance of the præcordial pain or "heaviness" after the injection.

Besides the cases already mentioned, the improvement in chronic superficial glossitis has reached far beyond expectation.

CASE 9.—I injected a soldier whose tongue was twice the normal size, deeply fissured and ulcerated, his condition having gradually got worse during the last five years. As in most of these cases of chronic glossitis, mercury had little or no influence upon it. One week after the injection the tongue had nearly regained its normal size, there was no ulceration, and the fissures were not nearly so deep, and the patient says that he has had more ease than he has had for some years. The injection was given on a Saturday, the man was on parade on Sunday, and shooting the following day. Unfortunately most patients suffer considerably more inconvenience than this, although the injection be prepared in the same way. Pain must depend far more upon the idiosyncrasy of the patient than upon the injection itself.

CASE 10.—Another patient with chronic superficial glossitis and two swellings on the tongue, which might have been either gummata or malignant disease, was given an injection as he was most anxious not to lose the anterior two-thirds of his tongue. The lumps completely disappeared and he said that he felt very much better.

Another case under mercurial treatment for two years without benefit showed almost a normal tongue 14 days after the injection. Patches of leucoplakia had even disappeared.

The risk of optic atrophy from "606" need scarcely be seriously considered, since no case of amaurosis is on record, and I have injected one case of bilateral optic neuritis without atrophy ensuing, one case of unilateral optic neuritis caused by injections of soamin, two cases of syphilitic choroiditis, and two cases of syphilitic iritis, which healed after a single injection. Professor Ehrlich has had now over 12,000 cases, and not one has had any eye trouble.

In parasyphilitic affections "606" will not be often indicated, since both tabes and general paralysis of the insane are usually too far advanced before treatment is started. If a case is obtained early the result of treatment is really marvellous, as the following case will show.

CASE 11.—The patient, aged 36 years, developed syphilis ten years ago, for which he was treated with mercury internally for three years. Owing to impotence and loss of control over the bladder and rectum of four years' duration he consulted Mr Arthur Shillitoe, who found that he had unequal pupils (the inequality being due to an old iritis of the right eye) which did not react to light and there were no knee-jerks. As he gave a positive Wassermann's reaction Mr. Shillitoe very kindly asked me to give him an injection of "606." Within a week after the injection the control over the rectum had been regained, and the trouble of not being able to start the act of micturition had disappeared. The knee-jerks were slight, the pupils reacted sluggishly to light, and the very slight ataxia which was present before had now disappeared. Seen again on Oct. 12th, my notes state that vision in the left eye is greatly improved and that glasses can be dispensed with. Erections returned; can do exercises and walk without getting tired. No indigestion and præcordial pain. Knee-jerks returned, and pupils react to light. Wassermann negative.

Three cases of tabes with marked ataxia did not improve under the injection, but foreign reports state that lightning pains disappear under the influence of "606" In one of the cases where there was a perforating ulcer an injection had the power of producing granulations, but owing to the joint being exposed complete cicatrisation was impossible.

It is more than probable that a very early case of general paralysis of the insane might be cured, but once degeneration becomes marked no further improvement can be expected. In two cases in which I used the injections no benefit was received.

Two cases of hemiplegia giving a positive Wassermann's reaction, and probably due to syphilitic thrombosis, did not improve after an injection.

The following rather unusual case is of some interest.

CASE 12.—A patient developed syphilis some years ago and had the usual symptoms, for which he was treated thoroughly. The symptoms never entirely went away, and a rash would appear periodically and there would also be attacks of malaise and great enlargement of the glands in the neck (size of hen's egg). Potassium iodide in large doses caused temporary improvement. I gave an injection of "606," and a fortnight later received the following letter from the patient, who had suffered very considerable pain:—

> I can hardly express my delight in being able to inform you that I am beginning to feel my old self again. Every day I can note an improvement in the feeling of well-being. The rash has gone and the glands are going; those at the angle of the jaw are still a little enlarged but seem to be getting smaller each day; those in the neck are reduced to the size of small peas and shot, and there is now no pain or tenderness in them. The awful depression and shooting pains are relieved, and once more I am beginning to feel there is some pleasure in being alive.

One of the greatest uses to which "606" will undoubtedly be put will be in the treatment of syphilitic women and congenital syphilis. Since women may be syphilitic without having, or having had, any symptoms of the disease, every woman who gives birth to syphilitic children should be herself regarded as syphilitic, the proof being a positive Wassermann's reaction which is obtained in these cases, and an injection of "606" has enabled such women to give birth to normal children. If a child is born with obvious signs of syphilis it is dangerous to inject the infant owing to the amount of endotoxin formed which a weak and marasmic child cannot overcome. Fortunately, there is a better way of treating congenital syphilis, as the following case, reported by Taege, shows.

CASE 13.—A girl, aged 19 years, with condylomata from which spirochætæ were obtained and who gave a positive Wassermann's reaction, bore on July 4th a marasmic child which weighed 4½ pounds. On the 13th pemphigus bullæ on the soles of the feet and paronychia of the fingers developed. On the following day the mother was injected with 0·3 gramme of "606." On the third day the lesions showed marked improvement and no spirochætæ were to be found in the condylomata. The child was suckled straight away by the mother, in consequence of which on the second day the symptoms increased in severity, to suddenly disappear with such extreme rapidity that on the fifth day the greyish colour had been replaced by the normal rose tint of the skin, the paronychia had vanished, the bullæ had become almost imperceptible, the child cried instead of whimpering, and took the breast eagerly. On the 29th the child weighed 8 pounds and showed no symptoms. The cure of the child is due to the antitoxin elaborated by the death of the mother's spirochætæ and conveyed to the child through her milk, no arsenic being found in the milk.

After every injection there is a leucocytosis which may sometimes be as high as 30,000; the increase is chiefly in the neutrophile leucocytes, and occasionally there is an eosinophilia. The usual count is about 17,000. The excretion of the arsenic takes roughly about a fortnight or three weeks after an intramuscular injection and the corresponding number of days after an intravenous, and since by the latter procedure the spirochætæ may not be completely destroyed in the time for safety many who use this route give a subsequent intra-muscular injection.

Albuminuria is an uncommon sequence of an injection. Constipation not infrequently appears, so on the second or third day it is advisable to order a laxative.

A rise of temperature after an injection is by no means an invariable rule and is not entirely influenced by the severity of the disease, although generally the severer the symptoms the greater is the rise of temperature. After an injection of "606" the tendency is for the Wassermann's reaction to become negative, the most usual time being between the third and fourth weeks. Some cases which had a chancre only and gave a negative Wassermann before injection gave a positive the week following, which again became negative, to remain so. So far as we can yet say, in congenital syphilis the reaction remains positive. Regarding how not

infrequently syphilis is complicated by other diseases and associated with other infections, I have endeavoured to select such cases in order to study the influence "606" has upon them. Where syphilis is complicated with tubercle, which in the malignant form it almost invariably is, the injection exerts a beneficial influence upon the tubercular lesions. Secondary infection with streptococci and staphylococci is often cured along with the syphilitic processes it complicates; for instance, phagedæna of the penis and pubis was checked with a single injection. Coccal infection in a case of gummatous ulceration of the leg with elephantiasis was overcome by "606." On the other hand, an injection of "606" does not render a patient immune to either a streptococcic or a staphylococcic infection, since one of my cases developed erysipelas a fortnight after the injection, and two or three have since been troubled with furunculosis in a mild degree. Many of the patients were suffering concurrently from gonorrhœa, but on this disease "606" exerted no influence either for better or worse.

When dealing with the action of a new drug which cannot be regarded as entirely harmless it is just as important to record one's failures as successes. In a case of leprosy not the slightest good result was produced by an injection of 0·5 gramme. One man's death was hastened by the injection, a case of supposed cerebro-spinal syphilis, which turned out post mortem to be a case of disseminated sarcoma. The patient was in an extremely bad condition, could hardly move, and had anæsthesia up as far as the neck. Death ensued on the second day. Both the blood and the cerebro-spinal fluid gave a negative Wassermann's reaction; unfortunately, the test was not carried out until after the injection had been given.

The last-mentioned case is most instructive, as a similar one will befall many when the drug is put upon the market. So let me advise the precautionary step of testing the patient by means of the Wassermann's reaction before the injection is given, as unless this is done several non-syphilitics will be treated with "606." It is absolutely useless in a case of syphilis to rely upon history, since a man will often say "Yes" when the question of his having had the bad disorder is put to him, when probably it was only a soft sore or gonorrhœa from which he was suffering.

Patients who have had one or two attacks of hemiplegia, advanced cases of tabes, and general paralysis of the insane should certainly never be treated. Cardiac disease, marked arterio-sclerosis, and Bright's disease are contra-indications. In one case—that of an alcoholic—delirium tremens commenced on the third day after the injection, and the patient's mental condition was not normal until a week later. To what extent the delirium tremens was dependent upon the injection or to the stopping of the alcohol it is impossible to say. We know that it is not an uncommon sequence after any surgical interference.

An emphysematous plethoric man, aged 50 years, developed pleurisy on the side of the injection on the second day. In two cases only did a rash develop after the injection, curiously enough limited to the limb where the injection was made; in both cases the rash was a typical erythema iris, which only lasted for a few days. A condition simulating angioneurotic œdema appeared in a congenital syphilitic who had general paralysis of the insane, but it lasted only for about 24 hours. The cases which did not respond are mentioned above.

So far two cases have recurred; both had extensive ulceration of the nose besides gummata elsewhere; both were injected on August 3rd with 0·4 gramme and on Sept. 10th both patients noticed a redness of one side of the nose, which in a few days became ulcerated. They both on Sept. 24th received a second injection of 0·5 gramme. It is probable that in both these cases the initial dose was too small. It will probably take years before we shall be able to regulate the dose on a sound basis. Should that be the case and even recurrences occur, the patient's general health is so much benefited by the initial dose that they would be in a better condition to be treated with mercury if necessary.

Fortunately, not a single case has developed secondary symptoms in which the chancre was the only one when the injection was made, and animal experiments also go to prove that a single injection is capable of producing an absolute cure, since Neisser was able to re-inoculate apes a second time with syphilis. A second attack in man is regarded by many as impossible, probably due to the inefficiency of mercury in producing a cure; therefore we shall no doubt see several such cases which have previously been treated with "606."

Much has yet to be learned before the final word on this wonderful remedy is given; one can say that the dangers have been extremely exaggerated, since only 12 deaths have occurred in 12,000 cases, and in many of these the injection was given as a last resource. This being the case, and there not having occurred an instance of visual disturbance, the drug will not, in my opinion, fail to achieve the object which its talented discoverer Geheimrat Professor Ehrlich had hoped for it.

Harley-street, W.

A CASE OF BENIGN CYST OF THE HUMERUS.

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(*With a Pathological Report by* HUBERT M. TURNBULL, M.A., M.D. OXON., *Director of the Pathological Institute, London Hospital.*)

THE patient, a boy, aged 13 years, was brought to the London Hospital on August 14th, 1909. He said that he had been knocked down and had fallen on to the right shoulder. When he got up the arm was painful and he could not move it. On examination the upper third of the shaft of the right humerus was much enlarged. It was firm, and the whole thickness of the shaft appeared to be uniformly involved, the swelling gradually shelving into the normal bone below. No eggshell crackling could be detected. The humerus was fractured about 2 inches below the upper epiphysis through the lower part of the enlargement. A skiagram (Fig. 1) showed expansion and rarefaction of the upper 3 inches of the diaphysis, limited above by the epiphyseal line and below by a well-marked concave margin of slightly sclerosed bone. The bony wall was well defined, but extremely thin, and at the lower end there was a transverse fracture with slight lateral displacement. The upper half of the swelling was crossed by a few trabeculæ, but otherwise the whole area was much less opaque than normal bone, though the opacity varied slightly in different parts of the swelling.

The previous history of the case was of great interest in that the boy had been in hospital two years before with the bone in a very similar condition of expansion and rarefaction, and with a fracture at the level of the surgical neck. Six days previously a man had pushed him on the shoulder; this was followed by pain which was exaggerated on attempting to move the arm. A diagnosis of sarcoma with spontaneous fracture was made, and amputation was advised. This, however, was refused, so the boy was discharged with a poroplastic shoulder-cap and the arm in a sling. Up to the day of the injury he had had no pain and had not noticed any swelling of the arm. The fracture united, and to quote his own words: "The arm got quite well and there was nothing the matter with it," until the accident on August 11th, 1909. Otherwise his previous history was uneventful, except for tuberculous disease of the right hip in 1899, with subsequent abscess formation and sinuses. Ultimately the hip-joint was excised. As far as the mother knew he had never had rickets, and he showed no signs of it now. There were two other children, aged 13 and 8 years respectively, who are both healthy. The mother was unaware of any tumour formation in members of her or her husband's family.

Operation was performed on August 20th, 1909. An incision four inches long was made on the antero-external aspect of the arm. The periosteum was exposed and appeared to be normal; it was then reflected from the expanded bone, but while this was being done the raspatory broke through the thin shell and a yellowish mucoid fluid escaped which was stained with blood. As rapidly as possible the whole of the affected part of the shaft was stripped of its periosteum and excised, leaving the epiphysis above and healthy bone below. The diaphysial side of the epiphysial line was gently scraped and the humerus was reconstituted. This part of the operation consisted in replacing the bone which had been removed by an ebony rod, such as is used for securing the intestine

outside the abdomen in the operation of colotomy. A distinctive feature was that the rod tapered to a point at one end, while the other was blunt, so that it resembled a sharpened pencil. The point was inserted into the epiphysis and the blunt end into the medullary cavity of the bone below. In this way the epiphysis was firmly joined to the shaft by a rigid rod. The periosteum was then sutured round the rod and the wound was closed. Healing took place by first intention and subsequent progress was uneventful. A poroplastic splint was moulded to fit the shoulder and extended down the forearm as far as the wrist, the elbow being flexed to a right angle. The splint was secured by straps passing round to the opposite side of the chest. Two months after the operation the splint was removed and the patient was given regular massage. At the present time the movements of the right upper extremity are perfect, and the muscles are rapidly increasing in size. The new bone is firm, straight, and regular, but slightly thicker than the left humerus; it is, however, three-quarters of an inch shorter. The skiagrams Nos. 2, 3, and 4, taken by Mr. Wilson and Dr. Gilbert Scott one week and two and six months respectively after operation, show the gradual deposit of new bone and some absorption of the ebony rod.

FIG. 1.

Showing the cyst with fracture. Note the even expansion of the bone, and cupping of the shaft at the lower border of the cyst.

FIG. 2.

One week after operation, the rod *in situ*.

The clinical diagnosis of a benign bone cyst presents considerable difficulties, but a thoughtful consideration of the history and physical signs and, above all, a careful interpretation of a good skiagram will ensure a correct diagnosis in the majority of cases. There is often little or no pain, and it is not until a fracture takes place that attention is drawn to the bone. In the present case the boy had no pain before the first fracture, and when the bone had united he had no further trouble until the second fracture occurred. On the other hand, there may be a good deal of pain, as in a case recorded by Jones and Morgan. The cyst was situated in the proximal phalanx of the index finger, which had been swollen for some years. At an early period pain was absent, but it developed later, radiating at times to the shoulder, and finally becoming so severe that the patient was hardly able to carry on her business as a dressmaker. In other cases pain is only noticed a few weeks before the patient comes under observation, although the cyst may be of considerable size. With the pain there is usually a certain amount of disability.

As a general rule these cysts give rise to little pain or inconvenience until they have attained a considerable size, and swelling of the bone is often the only symptom noticed by the patient. But even this may not attract attention until pain, disability, or fracture leads the patient to seek advice, although sometimes, especially in adults, the enlargement of the bone has been noticed for many years, possibly

since childhood. As might be anticipated, when cysts occur in such superficial bones as the tibia and phalanges, the enlargement is recognised much sooner than in the case of more deeply seated bones.

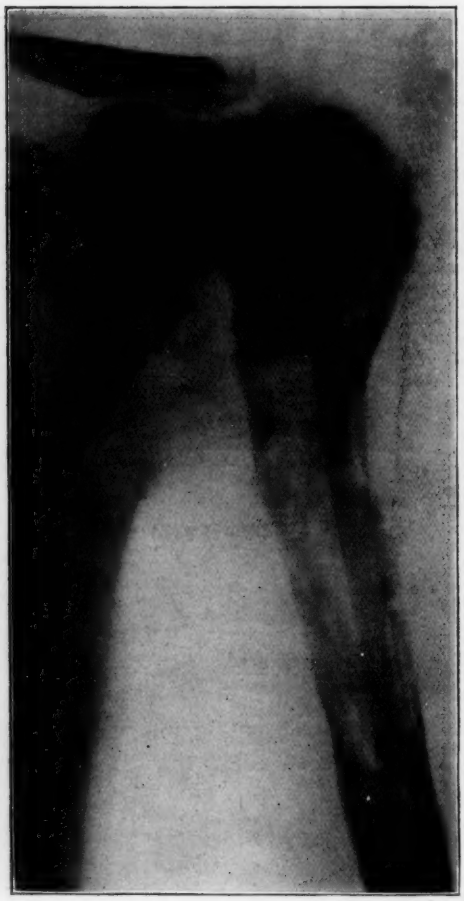
The relation of these cysts to injury is an interesting one, and it has often been discussed. Sometimes the history is so definite and the injury so severe that much support is given to the theory that at any rate some of these cysts are traumatic in origin. Beck[1] describes two cases. The first was that of a boy, aged 10 years, who had fallen 11 months previously into an excavation in the street; the fall was followed by intense pain, and a fracture was suspected; the boy was in bed for two days. Four weeks later he fell again, and was in bed for four weeks. A swelling of the size of a filbert was then detected near the spine of the tibia. Six months later he had another fall, and was in bed for six weeks; after that he limped, and the swelling became still larger. A typical cyst was found extending to the epiphysial line; the walls were lined with a smooth membrane, and the cavity was traversed by a few osseous remnants and contained blood-stained serum.

The second case was that of a girl, aged 13 years, who had slipped downstairs eight months previously. The left ankle became swollen and painful, and she was not able to stand again. A cyst was found in the lower third of the tibia; the walls were lined by a layer of greyish-white substance which consisted of cartilaginous tissue, with round cells, and myxomatous and degenerated tissue. The cavity contained black viscid serum.

P. Glimm[2] mentions the case of a boy, aged 12 years, with a cyst in the upper end of the femur, who dated the onset of pain from a fall. Tietze[3] alludes to a girl with cysts in the right femur and tibia, who had had pain in the right thigh ever since a fall on ice 13 years previously. Similar cases have been described by Bloodgood,[4] Buchanan,[5] and others.

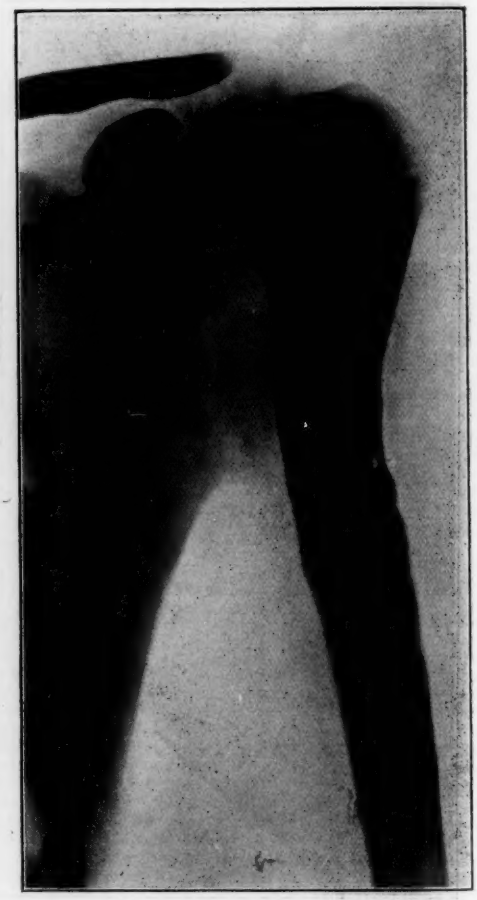
The following case described by Glimm[6] is attributed by him directly to the injury, and probably correctly so. A man, aged 25 years, had a severe blow on the anterior border of the tibia six months previously; he was in bed for three weeks with swelling and ecchymosis. The X rays and subsequently operation revealed a cyst of the size of a large plum in the thickened cortex; it had no connexion with the medullary cavity and was filled with blood. Glimm considered the case one of aseptic osteo-periostitis. This cyst

FIG. 3.



Two months after operation. The rod can still be seen indistinctly.

FIG. 4.



Six months after operation, showing the formation of new bone.

[1] American Journal of the Medical Sciences, vol. cxxi., p. 666.

[2] Glimm: Deutsche Zeitschrift für Chirurgie, Band lxxx., S. 476.
[3] Verhandlungen der Deutschen Gesellschaft für Chirurgie, 1906, Band xxxv., S. 167.
[4] Journal of American Medical Association, vol. xliii., 1904, p. 1124.
[5] Glasgow Medical Journal, 1882, vol. xvii., p. 340.
[6] Glimm: Ibid.

differed from the majority of bone cysts in being situated in the cortex instead of in the medulla, and instead of the bone being thinned and expanded it was actually thickened.

Müller [7] found that in 40 cases of bone cysts no less than 27—i.e., 67·5 per cent.—occurred in patients under 20 years of age, and 50 per cent.—that is, 20 out of the total 40—in patients between 10 and 20 years. Of the rest, 6 occurred in patients between 20 and 30 years. He also found that the majority of cysts are met with in the big long bones, the femur, tibia, and humerus being responsible for 38—that is, 76 per cent. of 50 cysts occurring in 43 patients. Cysts were most frequently found in the femur, 38 per cent. occurring in this bone, 22 per cent. in the tibia, and 16 per cent. in the humerus. The cysts may be multiple, several bones being affected in the same patient.

As the cyst develops the cortex is expanded and progressively absorbed until there is only a very thin shell of bone under the periosteum. A fracture then results from a very slight injury, or even from muscular action, though it may take place before this extreme stage is reached from a degree of violence which would not cause a fracture in a normal bone. In a number of cases the patient first came under medical observation on account of the fracture, the presence of the cyst having given rise to no symptoms previously, or at any rate to symptoms which were so slight that they were neglected by the patient. Such cases have been recorded by Glimm, Bloodgood, and others. The case which I have recorded is of interest in that fracture occurred on two separate occasions, at an interval of two years. Another point worthy of notice is that the first fracture united firmly, and the arm gave no further trouble till the second fracture took place.

Diagnosis.—Although in a certain number of cases the nature of the bony swelling is suggested by the history and physical signs, in the vast majority a definite diagnosis cannot be made until skiagrams have been taken and carefully examined. In the absence of an X-ray examination the diagnosis will lie between a benign cyst, myeloid or central sarcoma, certain inflammatory conditions, such as abscess, osteitis albuminosa, and so on.

Corson [8] reports a case of a cyst in a girl, aged 21 years, who had had an attack of typhoid fever at the age of 15 years. At 17 years of age she began to have pain in the right arm, and in her eighteenth year, while she was being helped from a train, the right humerus was fractured at the junction of the middle and lower thirds, where she had previously had most pain. The bone united, but the pain persisted. When the bone was finally explored the periosteum was found to be thickened and very adherent, the bone was very thin, and there was a cavity measuring 8 by 3 centimetres, containing clear brownish fluid. No bacteriological examination was made, but the thickening of the periosteum and its adhesion to the bone suggest that the condition was primarily an inflammatory one, possibly a typhoid osteomyelitis.

Eggshell crackling, if it can be obtained, will suggest a myeloid sarcoma or benign cyst, though very occasionally it is met with in other central tumours of bone.

The diagnosis will finally be made on the result of the X ray examination, though Jones and Morgan [9] say that a benign bone cyst cannot be differentiated with certainty from a slow-growing medullary sarcoma from X ray examination alone.

In a skiagram the cyst appears as a clear area in the expanded bone, reaching in a cyst of large size almost to the circumference, so that the actual bony cortex is reduced to a mere shell. A most important feature is the regularity of its outline. The bone has apparently been evenly expanded, so that what is left of the cortex is of a corresponding thickness on opposite sides of the cyst, and, further, the shell of bone presents a somewhat uniform density to the X rays. These cysts, when occurring in patients under 20, are generally found in the neighbourhood of the epiphysis, and it is important to note that they do not penetrate the epiphyseal line and invade the epiphysis.

Trabeculæ are often seen crossing the clear area, but Lexer is inaccurate in giving this as a point of differentiation from myeloid sarcoma, for bony trabeculæ are seen in these tumours.

There is yet one other point of interest, which is well shown in the first four figures in Jones and Morgan's article, and to a certain extent in our own case—namely, increased density of the bone immediately surrounding the cyst. In our case this is only seen where the bone limits the cyst below, but there is here a distinct appearance of sclerosis. The thickening of the bone seen in the case of an abscess enables us to exclude that at once, but a myeloid sarcoma presents greater difficulties. The typical features of a myeloid sarcoma are the irregularity of its outline, the varying thickness of the bony cortex, and the spreading of the growth more rapidly to one side or the other, so that it is asymmetrical, and does not present the uniform expansion of a benign cyst.

It often happens that the diagnosis is uncertain until the bone is actually opened at the time of operation. But then the escape of the serous or mucoid contents, which are sometimes blood-stained, the absence of growth or at the most the presence of cartilaginous masses in the walls of the cyst, and in many cases the presence of a lining membrane, leave no room for doubt.

Sometimes a bone cyst represents a myeloid sarcoma which has undergone extensive degeneration (Tietze [10]) but in this case, if other means of diagnosis fail, microscopical examination of the wall of the cyst will solve the difficulty.

Mr. F. S. Eve [11] has recorded an interesting case of a central sarcoma of the tibia involving the whole length of the bone. In the upper half the growth had undergone complete cystic degeneration.

Cysts may form as the result of osteitis albuminosa without any necrosis (Riedel [12] (Jena) and others), but in these cases one would expect distinct thickening of the bone and possibly of the periosteum. A bacteriological examination of the fluid might be positive.

Treatment.—In considering the treatment of this condition, we must not only cure the patient, but at the same time we should ensure a useful limb; this is especially important if a great part of the shaft of the bone is involved and the bony tissue replaced by the cyst.

Bloodgood, Sonnenburg,[13] and others were content with incising the bone, scraping the cyst wall, and packing the cavity with gauze. This gives a satisfactory result in the end, but it entails a tedious convalescence, and is not applicable in the case of a large cyst, especially if associated with a fracture. If the cyst is a small one, it is far better to scrape the walls thoroughly, sew the periosteum together, and close the wound, allowing the cavity to fill with blood clot. This will in time be absorbed and replaced by bone. Beck has slightly modified this by curetting the cavity and then pressing the osseous walls together.

Alternative methods are filling the cavity with decalcified bone, Mosetig-Moorhof's iodoform wax, or injecting paraffin, as suggested by Mr. A. J. Walton [14] in the treatment of chronic abscesses of bone. In the case of small bones resection is a suitable form of treatment, and was carried out by Müller on a patient who had a cyst of the fourth metatarsal. If, however, the cyst is so large that it occupies a considerable part of the shaft and little more than a shell of bone is left, and the bone is an important and independent one, it is advisable to provide an internal splint which will act as a scaffold and be a rigid support for the periosteum and other soft structures until the new bone is formed.

Mr. Harold Stiles by subperiosteal resection of the affected part of the diaphysis and subsequent suture of the periosteum has obtained some admirable results in the treatment of tubercle of the diaphysis of the bones of the leg and forearm. If, however, the femur or humerus is involved extension for some weeks is necessary to prevent shortening and angular deformity.

Lexer [15] in 1906 recorded a very successful case. The patient, a boy aged 14 years, had a cyst in the upper third of the humerus. The affected part of the bone was resected subperiosteally, and the deficiency made good by inserting a piece of a fibula which was removed with its periosteum from a recently amputated limb. The periosteum was sewn up,

[7] University of Pennsylvania Medical Bulletin, September, 1906, p. 173.
[8] Annals of Surgery, April, 1902, p. 505.
[9] Archives of the Roentgen Ray, April and May, 1907.
[10] Deutsche Gesellschaft für Chirurgie, Band xxxv., 1906, S. 167.
[11] Transactions of the Pathological Society of London, 1882, vol. xxxix., p. 273.
[12] Deutsche Gesellschaft für Chirurgie, 1906, Band xxxv., S. 174
[13] Deutsche Zeitschrift für Chirurgie, 1880, Band xii., p. 314.
[14] THE LANCET, Jan. 18th, 1908, p. 155.
[15] Deutsche Gesellschaft für Chirurgie, 1906, Band xxxv., S. 165.

the wound healed well, and the ultimate result was most satisfactory.

Alexis Thomson [16] recently showed a boy, aged 11 years, before the Edinburgh Medico-Chirurgical Society in whom the middle third of the humerus had been resected for sarcoma, a portion of the fibula being inserted in its place.

In our case the special points for consideration were the extremely thin, bony shell in the upper third of the bone, the fracture through this thin bone, and, lastly, the fact that the cyst extended up to the epiphysis. It was obvious that a thorough curetting would lead to further fracture of the bone, and that unless the proper distance between the epiphysis and shaft were maintained the ultimate result would be very bad; there was also the difficulty that the small epiphysis could not be controlled by any ordinary external splint. It occurred to me that an ordinary colotomy spigot would fulfil the necessary conditions. The periosteum was, therefore, stripped off the bone and the diseased part resected. Healthy bone was sawn through below and the upper end was twisted away from the epiphysis. The point of the rod was inserted into the soft epiphysis and the blunt end into the healthy medullary canal of the shaft below; in this way the epiphysis was fixed and maintained at its proper distance from the remaining shaft, and it was hoped that by sewing the periosteum round the rod the shape of the bone would be preserved. The subsequent history of the case is uneventful. New bone was gradually formed from the periosteum, and at the present time, fourteen months after the operation, the affected arm is as strong and as useful as the other.

The special points of interest in this case are the typical history, the two fractures from slight injury occurring at an interval of two years, the simple method of fixing the epiphysis to the remnant of the shaft, and the satisfactory shape and quality of the new bone.

Pathological Report by Dr. TURNBULL.

Macroscopic.—The specimen consists of a portion of bone about one and a half inches long. The bone is devoid of periosteum. The cortex is dilated in the upper part to form a thin, brittle shell which bounds a cup-shaped cavity in the upper part of the medulla. From the floor of this cavity a vertical septum projects for a short distance. The inner surface of the cavity is not quite smooth. A little blood clot and some tough, yellow, opaque tissue are adherent to it. The septum is of a rusty brown colour, and is tough and pliable. On vertical section through the centre of the bone the medulla for three-quarters of an inch below the floor of the cavity is found to be occupied by an abnormal tissue which also forms the septum. This tissue is red and gelatinous, with some minute, grey, refractile areas which suggest cartilage. Gritty particles can be felt with the point of the knife. This tissue is sharply limited from red marrow which lies beneath it. The corticalis in this lower part is of normal appearance. It is hard and of compact structure. It gradually thins to form the wall of the cup-shaped cavity.

Microscopic.—Small portions of the tough tissue adherent to the inner surface of the cystic cavity were removed, cut upon the freezing microtome, and stained in methylene blue and in hæmatoxylin during the progress of the operation. Larger portions of the same tissue were embedded in paraffin without decalcification. Finally, a portion of the bone, including the floor of the cavity above and the normal medulla below, was rapidly decalcified in nitric acid. Unfortunately, in order to prepare the report quickly, paraffin embedding was employed and this necessitated the removal of the greater part of the cortex.

Vertical sections of the bone show five zones of different appearance which merge with one another.

1. The surface towards the cavity is bounded in most of its extent by a zone of tissue which resembles in structure the portions of tissue removed from the lining of the cavity for the preliminary examinations.

The tissue consists of a net of broad moniliform hyaline bands separated by narrow clefts. In places the clefts widen out into larger areas of cellular tissue of the same structure as the stroma of the next zone. The hyaline bands contain no nuclei. Stained by van Gieson's method they are red and show whorls of ill-defined, very fine, more deeply stained fibrils. In some sections a few of the bands are impregnated by calcium. They do not give the staining reactions of cartilage, but appear to consist of an osteoid tissue in which there are no bone cells.

The cellular tissue in the clefts has a very pale matrix, which is stained a faint yellow in van Gieson. In this are relatively few spindle and stellate cells, which anastomose by long delicate processes. The nucleus is elongated oval. The cells are very uniform in size, shape, and staining reaction. The outermost cells lie flat upon the hyaline bands. In the centre of the cleft there is usually a capillary which is lined by a single row of spindle cells. There are many extravasated red corpuscles in this cellular tissue and much intra- and extra-cellular pigment. This pigment gives an iron reaction when treated by Turnbull's blue method. There are also considerable numbers of lymphocytes and an occasional plasma cell or eosinophil leucocyte.

The surface exposed to the cyst cavity is covered by red blood corpuscles with some fine fibrin filaments (Wiegert-Gram stain). Immediately beneath this the tissue appears to be degenerate. The hyaline bands stain feebly and the spindle cells in the clefts between them are not visible. Numerous red corpuscles are present here in the clefts.

2. Below this zone is a large area of delicate, œdematous, fibrous tissue. This is continuous with that seen in the clefts between the hyaline, osteoid bands. It is traversed by some very long and remarkably slender trabeculæ of lamellar bone. It also contains a few small portions of membrane bone.

The fibrous tissue shows a pale matrix which does not give the staining reactions of mucin. In this there are some very fine fibrils which are stained pink by van Gieson's stain, and relatively few slender, spindle, and stellate cells—which have long protoplasmic processes. There are many capillaries and there are numerous large extravasations of red blood corpuscles. A few lymphocytes are also present. In some sections there is a small area which differs considerably from the rest. It contains a few small narrow trabeculæ of coarse fibrillar osteoid tissue and bone. On the surface of one of these there are some osteoclasts. In the surrounding tissue there are several (13 in one section) multinuclear giant cells of similar structure to the osteoclasts. Further, the spindle cells are much more numerous, smaller, and less elongated. They also vary slightly in size and shape. There are no atypical nuclei, however.

In this fibrous tissue there is a large rounded space. It is in part sharply defined, in part ill defined, being bounded by a portion of the fibrous tissue which has been destroyed by hæmorrhage. It is filled by red corpuscles with a few fibrin filaments. Serial sections show that this space communicates with the main cavity.

The tissue contains some bony trabeculæ. As mentioned above, some small trabeculæ of coarse-fibred osteoid tissue or bone were found. There are also a few very long and exceedingly slender trabeculæ of membrane bone. These extend from the upper to the lower boundary of this zone and anastomose with one another. They have a narrow core of a substance in which there are no nuclei. This substance has a marked affinity for hæmatoxylin. In sections stained with Weigert's iron-hæmatoxylin and van Gieson and differentiated for a considerable time in water, it is stained blue in contrast to the bone and osteoid tissue. It thus reacts like the remnants of hyaline cartilage in the trabeculæ of normal bone. Further, in sections treated with Twort's stain (neutral red and light green) it is stained a bright red. Control sections show that hyaline cartilage is stained bright red by Twort's stain, whilst bone and osteoid tissue are stained green. The core therefore consists of hyaline cartilage in which there are no cartilage cells. Its outline is exceedingly irregular, showing numerous bays and blunt processes. It often appears to be interrupted. Unlike the remnants of cartilage in trabeculæ of normal bone, its margins are not sharply defined. They are stained deeper than the central part and show a felt-work of short, delicate fibrils which pass into the superjacent bone. In a few places these cartilaginous strands have bone on only one side, or both sides are free from bone and in contact with the fibrous tissue. In the greater part of their extent, however, they are covered by a narrow layer of lamellar bone. The latter has an osteoid zone on which a row of osteoblasts rests. Near the upper boundary of this zone a few fragments of similar hyaline cartilage are covered by a broad layer of osteoid tissue. The latter is devoid of nuclei and resembles in structure the hyaline bands of zone No. 1.

[16] Brit. Med. Jour., Dec. 18th, 1909, p. 1751.

There is also in this situation a small mass of similar hyaline cartilage. It consists of a network of narrow irregular trabeculæ enclosing very small spaces. The edges show the same felted fibrils, and these often bridge the spaces. In the spaces there is fibrous tissue containing cells which resemble osteoblasts. This fibrous tissue is in a few places osteoid.

3. In the periphery of the above area there is a broad zone of fibrous tissue which contains many trabeculæ of lamellar and membrane bone. This zone is semicircular and bounds the area of zone No. 2 not only inferiorly but laterally.

The fibrous tissue is continuous with that of zone No. 2. Here, however, it appears less œdematous. The fibrils are slightly more distinct and the elongated spindle cells are relatively more numerous. The capillary spaces are much larger. Lymphocytes are more numerous. There are also a few myelocytes and pigment granule cells.

Some of the trabeculæ consist entirely of membrane bone. These are more numerous towards zone No. 2. The majority consist of lamellar bone and many are segmented showing several lamellar systems. The largest trabeculæ are as stout as those in a control section taken from the diaphysis of the humerus of a boy aged 11 years. Almost all, however, contain, centrally, small fragments of membrane bone. Cartilage is not present. Osteoblasts rest upon the surface of a narrow osteoid zone. Osteoclasts in lacunæ are fairly numerous.

4. Separating the above zone from the normal medulla beneath is a narrow zone in which the fibrous tissue is much denser and contains stouter collagen fibres. In it there is a large amount of pigment which gives an iron reaction when treated by the Turnbull's blue method. It also encloses collections of myelocytes. In a section stained with Weigert's elastin some elastic remnants were found which were evidently derived from destroyed vessels. This zone is slightly bowed, with its convex surface towards zone No. 3. No trabeculæ of bone cross it, but a row of trabeculæ lies upon, and parallel to, its upper surface. It is continued upwards to separate the lower lateral aspect of zone No. 3 from the marrow beneath the cortex. Here it is deeply pigmented but is very ill defined and much less dense. The connective tissue cells and fibres of this zone are continuous with the supporting tissue of the marrow in zone No. 5.

5. This zone consists of normal medulla below the abnormal tissue and on its infero-lateral aspect. The marrow is cellular with small groups of fat cells. The cells consist of myelocytes and the other constituents of normal marrow; megakaryocytes are abundant. The supporting tissue of the marrow merges with the fibrous tissue in zone No. 4. The trabeculæ are of normal appearance. They are formed of lamellar bone. They are covered by osteoblasts. The osteoid zone is very narrow.

In sections treated with Weigert-Gram's and Twort's stains no bacteria were found.

Summary of microscopic report.—The microscopic structure of the cyst may be summarised as follows. It lies in a mass of solid tissue and has no epithelial nor endothelial lining. The surrounding mass consists essentially of a delicate fibrous tissue containing fine collagen fibrils and relatively few spindle and stellate cells. There are many capillaries within it and numerous areas of hæmorrhage. Blood pigment is present, especially in its periphery. It contains considerable numbers of lymphocytes and a very few eosinophil leucocytes and plasma cells. Where this fibrous tissue bounds the cyst it contains closely packed trabeculæ of an osteoid tissue devoid of nuclei. A few of these trabeculæ are impregnated with calcium. External to this it contains a very few small trabeculæ of membrane bone or osteoid tissue, and is traversed by a few remarkably long and slender trabeculæ of lamellar bone with a core of hyaline cartilage. There is also a small group of trabeculæ of similar cartilage; these are arranged in a reticular manner and enclose a tissue which contains osteoblasts and is in places osteoid. None of the cartilage contains cells. The fibrous tissue then becomes somewhat less œdematous and contains larger capillary spaces. It now occupies a zone in which there are many trabeculæ of membrane and lamellar bone. The trabeculæ of lamellar bone almost all contain portions of membrane bone in their centres. The majority of these trabeculæ are large and stout. Finally, at the periphery of the mass is a narrow zone in which the fibrous tissue is denser. Here it contains a very large amount of blood pigment. It also contains groups of myelocytes. It is not traversed by osseous trabeculæ. Its cells and fibres merge with the supporting tissue of the marrow of the medulla. This marrow and the trabeculæ of bone within it are of absolutely normal appearance.

Active resorption of bone in the fibrotic area is evidenced by a few osteoclasts in lacunæ upon the small membranous trabeculæ in the neighbourhood of the innermost zone and the lamellar trabeculæ in the third zone. Apposition of bone is much more general; the majority of the trabeculæ show an osteoid zone covered by osteoblasts.

One small area was found in which the fibrous tissue was much more cellular and contained multinuclear giant cells.

In the fibrous tissue there is a small cyst which communicates with the main cyst. It has no epithelial lining. Its wall is in part well defined, but not bounded by trabeculæ of osteoid tissue such as are present in the margin of the main cyst. The rest of its wall is ill defined and consists of an area of the fibrous tissue which has been destroyed by hæmorrhage.

Remarks.—The relative scarcity of the cells in the fibrous tissue, their uniformity and the structure of their nuclei exclude the presence of sarcoma. The small cellular area which contains multinuclear giant cells might, if seen alone, suggest giant-cell sarcoma. But here also there is little polymorphism in the cells, and no atypical nuclei are seen. The presence of giant cells and the increased number and younger form of the connective-tissue cells are explained by the active resorption and formation of membrane bone which are seen in this area.

In its structure and in its mode of transition into the normal marrow the fibrous tissue resembles that of a myelitis rather than that of a benign neoplasm. The narrow, denser zone at its periphery has not the characteristics of a pressure capsule. It is well defined only where it separates the fibrotic area from the subjacent medulla; it is very ill defined on the lateral aspect. Further, where it is well defined, its convexity is directed towards the centre of the fibrotic area. The increased density may possibly be due to the irritation of the abundant pigment. It is more probably due to mechanical influences; either to slight lateral movement of the fibrotic area upon the subjacent medulla, or to partial or complete separation at this point. The arrangement of the trabeculæ on its superior surface and the destruction of small vessels within it are in favour of such a mechanical origin.

The general arrangement of the abnormal fibrotic area suggests a chronic inflammation with the point of maximum intensity in the situation of the cyst. The formation of the osseous trabeculæ is greater in the periphery—that is, in the third zone. Such a picture may be seen where an area of medulla has been destroyed by a known inflammatory process. But the minute histological structure affords no evidence of any specific inflammation. A few plasma cells and eosinophil leucocytes were found on careful search, but these are not present in sufficient numbers to justify a diagnosis of chronic septic inflammation. Moreover, cysts due to chronic infection by pyogenic organisms (osteitis albuminosa) have been found in the medulla of the long bones and these differ in structure markedly from this cyst. Braun,[17] for instance, described a cyst from which staphylococcus pyogenes albus was cultivated. The cyst had caused a local swelling in the tibia of a girl, aged 18 years, and had been present for several years. Its presence was not accompanied by fever. But in this case the corticalis was thickened and the cyst was lined by a whitish membrane. The microscopic structure was typical of chronic septic inflammation; the wall of the cyst consisted of granulation tissue which contained numerous fat-granule-cells and was extensively infiltrated by polymorphonuclear leucocytes. Further, diplococci were demonstrated by Gram's method. The abnormal tissue therefore appears to be a fibrosis of the marrow of inflammatory origin, but there is no evidence of any specific irritant. The structure of the trabeculæ in the third zone witnesses to the chronicity of the process. The portions of membrane bone within them show that they originated in an abnormal process of ossification. Their large size and their division into lamellar segments show that they have been present for a long time.

Hyaline cartilage is present. The extreme length of the

[17] Professor Dr. Braun: Beiträge zur Klinischen Chirurgie, Band lii., 1907, S. 476, Fall 1.

strands of this cartilage and their disposition show that they are not connected with the normal endochondral ossification. But the structure has no resemblance to an ordinary enchondroma. The cartilage is either the remnant of a large mass which has been almost completely replaced by the fibrotic marrow or it has been formed by the fibrotic marrow. From the histological appearances it is impossible to decide with certainty which of these processes has occurred. The margins of the cartilage are rarely well defined; fine fibrillar brushes pass into the bone or osteoid tissue which has been deposited upon them. They have not the sharply-cut appearance which is seen in the cartilaginous remnants in normal endochondral ossification or in the ossification of ecchondroses. This indicates that the cartilage has not been eroded by the fibrous marrow. But such frayed edges might be the result of degenerative dissolution. It may be said that the histological appearances are in favour of the view that the cartilage has been formed by a metamorphosis of the fibrotic marrow analogous to that which has led to the formation of the osteoid tissue and membrane bone.

The formation of cartilage might be an accidental complication due to the healing of a fracture or infraction. But this explanation is inadequate in other cases of bone cysts in which cartilage was present. Again, cartilage has been found rarely, if ever, in cases of osteitis fibrosa (von Recklinghausen,[18] Rehn,[19] Mönckeberg,[20] Gaugele[21]) in which there has been a similar rarefaction leading to fracture of the long bones. In this connexion it may be mentioned that the structure of the wall of the recent accessory cyst suggests that the main cyst has been formed by solution of the fibrotic marrow and not by degeneration of any cartilaginous remnant or growth.

The structure of that portion of the medulla which is not involved in the fibrosis shows that no general disease of the skeleton is present. Thus the narrowness of the osteoid zone upon the trabeculæ excludes active rickets and osteomalacia.

It may therefore be concluded that the formation of the cyst is associated with a local process which is of the nature of an inflammation. This process has led to fibrosis of the marrow with destruction of old bone and the formation of recent osteoid tissue, membrane and lamellar bone. The process is of long duration. The process has also led to the formation of hyaline cartilage; or possibly the process has been provoked by the degeneration of an abnormal deposit of cartilage.

It is impossible to make a more precise conjecture as to the nature of the morbid process without first analysing the other reported cases of bone cysts, of osteitis deformans, and of osteitis fibrosa. Owing to want of space here this analysis has been reserved for publication elsewhere.

[18] Von Recklinghausen: Festschrift. Rudolph Virchow zu seinem 71 Geburtstage gewidmet von den früheren und jetzigen Assistenten. Berlin, 1891.

[19] Rehn: Verhandlungen der Deutschen Gesellschaft für Chirurgie, Band xxxiii., 1904, S. 424.

[20] Mönckeberg: Verhandlungen der Deutschen Pathologischen Gesellschaft. 7 Tagung. 1904, Heft 1, S. 232.

[21] Gaugele: Langenbeck's Archiv für Klinische Chirurgie, Band lxxxiii., 1907, S. 953.

ANAPHYLAXIA IN HAY FEVER, NETTLE-RASH, AND ASTHMA.

BY G. BILLARD,

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IN a memoir published in conjunction with L. Maltet in the *Journal de Physiologie et de Pathologie Générale*[1] I have set forth a very ingenious theory advanced by Professor Langlois: "Hay fever is a good example of anaphylaxia so closely studied by Ch. Richet; a first attack, far from imparting immunity, renders the subjects extremely susceptible." Thus, for several years an individual is attacked by continual catarrh to which he does not attach any great importance; anaphylaxia does its work, and eventually the patient is exposed to infection and has a fit of asthma.

I wish to place special emphasis on this theory, that all persons attacked by hay fever are anaphylactised persons. I will proceed, first of all, to reproduce the observation of my co-worker, Maltet. This observation shows very clearly the successive steps in the strides of the disease from nasal catarrh to a bad attack of asthma.

M—— is asthmatic, periodically asthmatic. At first qualifying for a doctor in pharmacy, from 1894 to 1897 he suffered very frequently from nasal catarrh when handling the drugs, but he took no notice of it and never felt difficulty in breathing. During his year of military service the colds in the head disappeared, although he frequently slept amongst the hay, but in very airy spaces. M—— then passed four years at the Medical College of Lyons, and the symptoms of catarrh only appeared at rare intervals, in spite of his assiduous work at first in Professor Grola's and afterwards in Professor Lepine's laboratory.

He went, as a young practitioner, to live, in 1902, at Clermont-Ferrand in a workshop close to the house of a herbalist. After a short time frequent attacks of the catarrh appeared, then one day shortness of breath came on unexpectedly: M—— was very asthmatic.

He prescribed at first for himself with old drugs ready to hand. The attacks became more frequent, more acute. His doctor advised a season at Mont-Durant, and during this time there were no attacks, but the return to the pharmacy brought on the complaint afresh.

After visiting a specialist for nasal disorders, who cauterised, performed resection, and removed certain portions of the mucous membrane, he felt no relief; the disease lay in wait for him at his doorstep. The attacks became terrible and alarming. The patient was compelled to leave his home in order to obtain relief and a return to a normal state; he did not dare to return home. He went to DR. Garel, who advised him to give up the pharmacy.

M—— then commenced his medical studies. He had no longer the fits of asthma, but he was always very sensitive to a large number of pollens and germs whenever he happened to be in their presence in a confined space where they were in suspension.

This observation, then, is most instructive and shows in a striking manner the progress of anaphylaxia. As a result of my own research and study in this direction for a period exceeding six years, I could bring forward a great number of similar observations, and all whom this question interests can recall identical facts in their practice or from their medical memoranda. At the present time it seems to me irrefutable that all the asthmatic symptoms of hay fever, or rather that those which began by a hay-fever cold and which have increased to fits of asthma, have been thus evolved by an anaphylaxia peculiar to pollens and germinating dust.

In the memoir previously quoted I mentioned that, as an explanation of this peculiar sensitiveness of certain subjects to pollens and germinating dust, I had adopted the hypothesis of Withebill Hinkel of Buffalo, who recognises three conditions essential to the production of hay fever: (1) A nervous temperament, hereditary or acquired; (2) a sensitiveness, or a peculiar morbid excitability of the mucous membrane, or indeed a nasal complaint; and (3) an external irritant. I now extend these three conditions to hay asthma and to ordinary asthma. After very close observation of my patients I have come to this conclusion, that the majority of subjects attacked by hay fever or asthma are persons hereditarily anaphylactic, or have during their life acquired anaphylaxia. As a result of Professor Richet's remarkable discovery, that certain poisons injected in animals are capable of altering the organisms of the latter to such an extent that they become more and more sensitive to these poisons, it would appear that a whole series of inexplicable disorders find an easy explanation if anaphylaxia is taken into consideration.

In a recent clinical lecture[2] Professor Hutinel says "that acetonæmic vomiting may be considered a sort of digestive asthma. The bilious headache represents, on the other hand, a kind of nervous asthma; eczema, a cutaneous asthma; and gout, an asthma of the joints. The common ground of arthritis brings these diverse complaints into close connexion. Thus it is common to find amongst the ancestors of asthmatic persons nervous troubles, gout, diabetes, obesity." In my opinion, all these manifestations depend on anaphylaxia.

A manifestation of anaphylaxia which in my eyes ranks prominently amongst the neuro-arthritics is nettle-rash, which is frequently observed in the course of anaphylactic accidents such as poisoning by shell-fish, by certain fruits such as strawberries, and certain medical products such as antipyrin. For some years I have been struck with the fact that it is rare for a neuro-arthritic in the course of his life not to have had nettle-rash of some sort. Not only does one discover this nettle-rash among the individuals affected, but almost always in their hereditary family antecedents.

Dr. I. N. came of ancestors suffering from arthritis in an

[1] Essais de Sérothérapie contre le Rhume des Foins et contre l'Asthme, par G. Billard et Maltet, Journal de Physiologie et de Pathologie Générale, March, 1907.

[2] Le Correspondant Médical, January, 1910.

acute form, but he only of the family had had poisonous nettle-rash. During his childhood he ate daily, and in considerable quantities, all kinds of sea fish and crustacea without any apparent change in his health, which up to then was excellent. At 18 years of age certain things happened. 1. When 18, at an evening meal, he partook of skate; at the end of the meal, left alone by the guests, he was affected with inconvenience in breathing, with a generalised form of nettle-rash, and afterwards with asphyxia; ipecacuanha was given, and a complete cure effected in one night. 2. Some months later at the evening meal he ate some mussels. At the end of the repast the same acute symptoms occurred, and the same cure was effected by an emetic. 3. When 19 years, he partook of some sea-crayfish at the evening meal. Towards 11 o'clock cutaneous nettle-rash appeared with hissing noises in the bronchial tubes. Of course, after each occurrence he gave up the incriminating food. 4. When 25 years old, one evening he was tempted by some very fine mussels. He ate one only. In the night he was attacked by a mild form of nettle-rash. 5. When 50 years of age, he ate oysters in the evening; in the night nettle-rash and hissing noises in the bronchial tubes ensued. 6. At 56 years, he ate a little red mullet from the Mediterranean, and this caused a mild fit of asthma and some irritation in the chest in the night.

Here, then, was a patient who, by means of successive nettle-rash producing reagents, was brought to an asthmatic condition. This picture, unless one is mistaken in it, resembles the notes on M. reproduced above.

If nettle-rash is really an anaphylactic manifestation we ought to find it in cases of asthmatic patients. There does not appear a doubt that nettle-rash is a manifestation of anaphylaxia, as the works of Bruck witness.[3]

It is known that Wolf Eisner has expressed the hypothesis that nettle-rash is an anaphylactic phenomenon connected with the foreign albumins in the organism. In order to prove this theory the author has carried out research work to see if substances which are known to excite nettle-rash in man are capable of giving rise to anaphylaxia in animals, such as rabbits and guinea-pigs, which have been injected previously with the serum of the pig or the extract from the muscle of the crab. Now these animals present, after renewed injections from these substances, typical phenomena of anaphylaxia; again, the injection of the serum from these anaphylacticised animals into other animals was found to render them hyper-sensitive.

The author has been able to establish, moreover, that in the case of man alimentary nettle-rash was an anaphylactic reaction. A young man could not for two years after having eaten a pork sausage, which produced morbid effects, partake of any pig meat without suffering immediately from an extended eruption of nettle-rash. Now the injection of the serum from this man into a guinea-pig excited immediately an extremely clear anaphylaxia with regard to the pig's serum.

It is generally known that the treatment introduced by Dr. Rowland (of East Corinth), who recommended the injection of anti-diphtheric serum as an antidote to hay-fever and obtained at first excellent results, has had to be given up on account of very serious, and sometimes fatal, accidents of anaphylaxia amongst those predisposed. I have, on my part, observed a nettle-rash and grave anaphylactic accidents in the case of a young child (asthmatically) predisposed, following an injection of Roux's serum in the course of diphtheria.

What are the substances which can cause anaphylaxia? I cannot do better than refer to the work of Armand-Deville,[4] from which I extract the following law:—

> There exist a certain number of organic substances which, introduced for the first time into the organism, in innocuous doses, have the property of producing in the organism, after a fixed period of incubation, anaphylaxia—that is, an extreme sensitiveness to minimum doses of the same substance, which produce no trouble in an organism not so treated. This anaphylactic condition appears to be connected with the development in the organism of a body, or of a special property which exists, amongst others, in the serum of the blood, since by introduction of this serum into another individual of the same species this person is immediately plunged into a state of anaphylaxia.

These substances, of organic origin, are derived either from the animal or the vegetable kingdom. They are introduced usually by the digestive tract. Others, on the contrary, penetrate through the respiratory tract or through the mucous membranes of the eye.[5] It is especially these last which interest us here. The toxic albumins, pollens and germs, which reach the mucous membranes of the eye or of the upper respiratory tracts cause there what I have called up to the present nettle-rash in the upper respiratory tracts.

In the memoirs published in conjunction with Maltet, at first in the *Journal de Physiologie et de Pathologie Générale*, then in the *Gazette des Hôpitaux*,[6] I have said that essential asthma, irregular in its recurrences, can be excited by the toxic albumins, pollens and germs. I am obliged to recognise to-day that these last toxic substances are not the only ones to provoke the fits of asthma, and with certain of my patients I have seen these appear as a sequel of indigestion from high game, and also following the indigestion from sea fish, crustacea, &c. And thus, as the data I published quite recently indicate, very slight proportions of substances introduced into the stomach are able to cause the attacks. I am convinced that it is for this reason that diet-tables have been established empirically at the spas where neuro-arthritics are treated. These diet-tables have, in effect, as their aim the suppression, as far as is possible, of anaphylactic substances. Now, even there individual susceptibilities are not taken into account, so that a patient who would never have an asthmatic attack in eating sausage would show symptoms of such an attack if he had taken an oyster. There are, I believe, few persons who have not observed for themselves that certain foods and certain substances do not "pass," causing various forms of indigestion, regarded as trivial, which are in reality nothing less than anaphylactic manifestations of the organism. Moreover, certain poisonous foods, and in particular the poisons conveyed by certain kinds of fish, by crustacea or molluscs, and even the nettle-rash produced by strawberries,—all these, it seems, can legitimately be placed under the phenomena of anaphylaxia, although it has not been possible, experimentally, to obtain the anaphylaxia with serum. It is, however, in consequence of the possibility of this process that Hutinel has been led to hold the view that intolerance to certain nutriments, both in the maternal milk and in cow's milk, is a true manifestation of anaphylaxia in milk. Again, we are certainly entitled to place in the category of anaphylactic reactions, although the intimate mechanism of them may be slightly different, the phenomena that the inoculation of tuberculin produces in a tuberculous subject.

Everybody is aware to-day that in hereditary neuro-arthritis different conditions are transmitted which constitute varying manifestations of neuro-arthritis. It is known, for instance, that a corpulent person will have a gouty son; that this gouty son may have an asthmatic or diabetic son, or one subject to gravel, &c. In a family that I attended for four years in the south I was able to state the following facts: a grandfather with thickened arteries and chronically rheumatic; a grandmother literally poisoned every time she ate sea fish or crustacea, having, moreover, eczema in the hands every time she touched primroses, the cause of which was for long unknown; a daughter, cholo-lithic; grandsons, the first asthmatic, the second tuberculous, the third attacked by manifestations of poisoning following on indigestion from sausage and oysters.

From the whole of the facts that I have cited above I am able to conclude that neuro-arthritics, and especially asthmatics and those predisposed to hay fever, are victims to anaphylaxia, either acquired or hereditary.

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[3] Contribution Expérimentale à l'Étiologie et à la Pathologie de l'Urticaire, Archiv für Dermatologie und Syphilis, vol. xcvi., p. 41. Analysé in Biologie Médicale.

[4] L'Anaphylaxie, Masson and Co., Paris, 1910.

[5] I would add, indeed, that certain of these penetrate through the skin. Certain neuro-arthritics contract eczema in contact with primroses, chrysanthemums, &c.

[6] Billard et Maltet: Gazette des Hôpitaux, 1909, No. 52, p. 651.

TUNBRIDGE WELLS GENERAL HOSPITAL.—Sir David Salomons, Bart., has just presented to the Tunbridge Wells General Hospital some radium, an installation of the Roentgen rays, and a Finsen lamp. The radium will remain in the custody of the hospital authorities, but will be available for private practitioners on payment of a small fee. The Roentgen rays apparatus will amplify that at present in use. The hospital has previously benefited by gifts from Sir David Salomons.

THREE CASES OF THROMBOSIS OF THE LATERAL SINUS

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THE following three cases occurred during my recent term of office at the Central London Throat and Ear Hospital, and were all under the care of Dr. Percy Jakins, to whom I am indebted for permission to publish them.

Thrombosis of the lateral sinus is one of the complications of middle-ear suppuration that practitioners always have to be on the look-out for. It may show itself as a perfectly clear clinical picture presenting no great difficulties of diagnosis, or, again, should it be masked by signs and symptoms of some other intracranial complication, such as meningitis or brain abscess, it may be a very difficult task to decide the exact lesion with which you have to deal. Haseler's figures show that in 81,684 cases of chronic middle-ear suppuration 116 deaths took place from intracranial complications, and of these 48 were due to thrombosis, 40 to meningitis, and 28 to brain abscess. Figures obtained from the hospitals of London by Pitt show an almost exactly similar proportion. Thus it is evident that thrombosis of the lateral sinus is one of the most frequent, if not the most frequent, complications of a suppurating ear. When the prevalence of chronic suppurative catarrh and the proximity of the lateral sinus to the mastoid antrum (for the antrum is always involved in chronic suppurative catarrh, if not the prime cause of persistence of suppuration in the ear) are considered—it may be the sinus forming one of the antral walls—it is surprising that thrombosis is not more common than it is. I can recall several cases when on opening the mastoid the sinus was found lying bare in the posterior wall of the antrum, covered with granulations and exposed to absolute direct infection. When thrombosis does take place the infection is brought about more frequently through intercommunicating venous channels than by direct extension. This is quite easily understood when the great resisting power of the dura is considered—a resisting power much greater than that of bone; the presence of granulations on the dura in some cases is in reality an additional protection against infection of the sinus.

In all cases of chronic middle-ear suppuration the surgeon ought ever to be on the *qui vive* for symptoms which indicate intracranial trouble. Patients should be warned of the dangers which they run; urgent symptoms should be explained to them, as headache, vomiting, giddiness, shivering fits, mastoid pain, &c. In addition they ought to be impressed with the necessity of immediately reporting themselves to the aural surgeon should one or all of these symptoms become evident. The onset and symptoms of thrombosis are more easily explained by a consideration of the following cases.

CASE 1.—The patient, a male, aged 14 years, was on Sept. 6th, 1909, admitted to the Central London Throat and Ear Hospital with a history of a discharge from the right ear of three months' duration. The discharge ceased suddenly a week previously to admission, and two days later the lad complained of severe pain in the head. The pain was located principally behind the right ear, and was very severe and constant. Since the discharge ceased the patient had had several rigors. There was marked tenderness in the occipital region over the site of the mastoid emissary vein (Griesinger's symptom) and along the line of the internal jugular vein. The head was bent over on to the right shoulder and supported with the patient's right hand. There was no mastoid swelling or tenderness. The temperature was 100·8° F., and the pulse 120, small and weak. Shortly after admission the patient had a severe rigor, the temperature rising to 104°. The tongue was coated and furred. The pupils were equal and active and the discs normal. There was no nystagmus, nor was there rombergism, and the reflexes were normal. Dynamometer: right hand, 50; left, 40. There was no vomiting or nausea, and consciousness was clear and unimpaired. The right meatus was full of inspissated pus and no view of membrane was obtained. A diagnosis was made of thrombosis of the lateral sinus.

Operation.—On Sept. 6th the right mastoid was exposed by the usual incision behind the ear. The mastoid cells were opened and were found to contain pus. The antrum also contained pus and cholesteatoma. The bridge and ossicles were removed. The lateral sinus was next exposed, and as soon as the bony wall was broken through pus welled up into the wound (peri-sinus abscess). The sinus contained a large whitish clot, very offensive, not broken down but firmly adherent. The clot was partially removed with spoon and curette (but not until fluid blood was reached), and the sinus was plugged with iodoform gauze. At this point there was troublesome hæmorrhage from the mastoid emissary vein. The upper flap, which had been cut previously, was stitched into place, a large rubber tube was inserted in the meatus and partial closing of the post-auricular wound completed the operation.

A pathological report of the pus by Dr. Wyatt Wingrave stated that it contained almost every variety of known organisms with the exception of the tubercle bacillus, the predominating ones being the streptococcus, the staphylococcus, the bacillus proteus vulgaris, and the bacillus pyogenes fœtidus.

On Sept. 7th the patient's condition had improved slightly. The temperature was subnormal, and the pulse was 78 and very irregular. Vomiting and rigors were absent. There was slight head retraction. Kernig's sign was present but not marked. When the wound was dressed the discharge was principally blood-stained serum. On the 8th the patient's general condition had greatly improved and the pulse was more regular. There was a slight rise of temperature at 2 P.M., but no rigor. The head retraction had disappeared. The urine contained a trace of albumin. The wound was dressed. The discharge was very fœtid, and on this account a dressing of chlorinated soda was used; the plug in the lateral sinus was also changed. On the 9th the general condition remained good, the pulse being 86 and the temperature 98°. The tongue was coated, but there was no sickness or nausea, and no rigors or headache. There was now no pain on pressure over the internal jugular vein. From the 10th to the 21st there was steady convalescence. The wound was dressed daily, being sponged out with hydrogen peroxide and plugged with plain sterile gauze. The patient was allowed to get up on this day. On Oct. 11th he was sent home. The wound had healed, but there was a slight discharge through the meatal canal. On March 7th, 1910, the discharge had quite ceased and the hearing was good.

This was a fairly typical case of thrombosis of the lateral sinus. The following are the main points of importance:—(1) Cessation of discharge; (2) sudden onset of pain behind the ear; (3) tenderness along the internal jugular vein; (4) shivering (rigors); (5) Griesinger's symptom (tenderness and slight œdema over the site of the emissary vein, although no tenderness or swelling over the mastoid antrum); (6) the discs normal; and (7) consciousness unimpaired.

The next case illustrates well the difficulties of diagnosis. From the history, the examination of the patient, and the lumbar puncture, a diagnosis of meningitis was quite justified.

CASE 2.—The patient, a married woman, aged 28 years, was sent by Dr. J. Read Pooler to the Central London Throat and Ear Hospital to be placed under the care of Dr. Percy Jakins on Dec. 28th, 1909. There had been discharge from the left ear all her life, increasing during the last three weeks. A week before admission there had been a sudden onset of high temperature, ranging from 101° to 103° F., accompanied by a dull, drowsy condition, with head retraction and severe frontal and occipital headache. There was occipital pain radiating down the spine, with marked tenderness in the region of the occiput and over the site of the mastoid emissary vein on the left side. The slightest movement of the head caused severe pain. The patient could be roused to answer a question, but would immediately lapse into a dull, drowsy condition. The face was alternately flushed and pale. The temperature was 100° and the pulse was 100 and irregular. There was obstructive deafness. The meatus was full of inspissated pus; no view of membrane obtained. The tongue was coated and furred. There was no paresis of the ocular muscles or nystagmus, and the pupils reacted to light and accommodation. Slight optic neuritis was present on both sides. The knee-jerks were sluggish, the left one being almost absent. There was ankle clonus on both sides, most marked on the left side. Dorsiflexion on both sides; Kernig's sign present. Lumbar puncture was performed, and 15 cubic centimetres of fluid were

extracted under low pressure. Cells present included polymorphonuclear leucocytes 80 per cent., lymphocytes 20 per cent. Bacteria present were bacillus proteus vulgaris, bacillus pyogenes fœtidus. A culture from the cerebro-spinal fluid showed the same bacteria. An examination of the aural discharge revealed the presence of the bacillus proteus vulgaris, the bacillus pyogenes fœtidus, and staphylococci. There was no sickness, or rigors, or giddiness. A diagnosis of meningitis was made, and it was decided to explore the mastoid.

Operation.—On Dec. 29th the radical mastoid operation was performed by Dr. Percy Jakins. The bridge contained a large cell which was full of pus. A large quantity of pus was also found in the antrum. The lateral sinus was completely thrombosed, and an abscess was found between it and the bone, communicating with an extra-dural abscess in the posterior fossa. Another extra-dural abscess was found above the tegmen antri, which was carious. The dura of the middle and posterior fossæ was carefully examined, but no opening was found. In the course of the operation the external semicircular canal was obliterated. The wound being very fœtid it was dressed with chlorinated soda and hydrogen peroxide, the post-auricular wound being plugged and left open. Towards the end of the operation, whilst on the operating-table, the patient had a severe rigor. On the 30th another severe rigor was experienced and the temperature rose to 105°. The patient was very dull and drowsy and the pulse and respirations were rapid. On Jan. 1st, 1910, the temperature was somewhat pyæmic in type. Lumbar puncture was performed, but no fluid could be got out. On the 3rd the patient's condition was about the same. She could be roused to answer a question, but otherwise she remained in a semi-comatose condition. She had less pain than on admission, and the deafness was less marked. There was a tendency to left-sided facial paralysis. The wound, in spite of daily dressings, was still very fœtid, and the tendency of the temperature was to go up. On the 4th the pus from the wound was examined and was found to contain staphylococci, streptococci, the bacillus proteus vulgaris, and the bacillus pyogenes fœtidus. The patient's general condition showed slight improvement. The temperature varied from 100° to 101°. On the 5th the general condition was about the same. The patient expressed herself as feeling much better. The temperature varied, but the tendency was to keep up. On the 6th the general condition was not so good. The patient complained of headaches and was much duller, and had slight head retraction. The discs were examined again, and the edges were found to be very indistinct. There was marked engorgement of the veins, especially in the right eye; the temperature was still up. On the 15th the temperature gradually became normal and then sub-normal, the pulse remaining rapid. Consciousness became quite clear and the patient's condition was greatly improved. The wound was granulating well, but was discharging freely. On the 17th the temperature was subnormal, with a rapid pulse. The tendency to left-sided facial paralysis was more marked. There were paresis of the left external rectus and marked ankle-clonus, especially on the left side. The left knee-jerk was more active than the right. The left-hand grip was weaker than the right. Giddiness was experienced on sitting up in bed and was rotatory in type, objects appearing to go to the right. There was slight spontaneous nystagmus to the right side. Associated movements could be performed as well on the left as on the right side. There was extreme somnolence, but the patient could always be roused. On the 23rd the patient remained in the same condition, with a sub-normal temperature and a rapid pulse, and she complained of headache. The reflexes and the nystagmus were as on the 17th. The patient had vomited twice. The amount of discharge from the wound varied—one dressing would be saturated with discharge, while another would be quite dry. On the 24th the headache had become very severe. Otherwise the patient's condition was unaltered. The giddiness was much less. On the 25th the headache was very severe and was referred principally to the frontal and occipital regions. The vomiting continued. The patient was very dull and sleepy, with a temperature of 97·8° and a pulse-rate of 100. The reflexes were the same as a week ago. An examination of the optic discs revealed a large flame-shaped hæmorrhage on the right side. On account of the headache and the vomiting, and the state of the pulse and temperature, Dr. Jakins decided to explore the temporo-sphenoidal lobe. On the 27th a second operation was performed. The old wound was opened up, an incision was carried up vertically behind the ear, and the periosteum was elevated. A trephine opening was made half an inch directly above the meatus and the middle fossa was opened. The meninges appeared to be quite normal. The dura was incised. The temporo-sphenoidal lobe was explored with the "pus-seeker," but no abscess was found. A small fistula was found in the tegmen antri; this was well opened up. On the 28th, following upon the operation, the patient was very dull and collapsed, the temperature being 96° and the pulse 40. She was semi-conscious, cold, and in a condition of extreme shock, with feeble, irregular pulse and dilated pupils. Brandy, strychnine hypodermically, hot water bottles, and hot saline enemata were freely used. She remained in this condition for two days, when, suddenly becoming fully conscious, alert, and brisk, she desired to sit up in bed to read, and was able to answer any questions intelligently. The sudden change in the condition of the patient was associated with an increased discharge of pus from the mastoid wound. The slight paresis of the face and eye had improved, and the wound was granulating well. On the 31st Dr. Purves Stewart kindly saw the case with Dr. Jakins. He could find no local lesion, only general meningitis. The wound granulated well and the patient made an uninterrupted recovery, leaving the hospital with the wound closed on Feb. 28th, the facial and ocular paralyses having entirely disappeared. When seen on March 12th the patient appeared to be in splendid condition. She had been staying at Bournemouth for 14 days and had not had, she said, a headache since the last operation.

How far the diagnosis was at fault will be readily seen from the subsequent history of the case as narrated above. Meningitis was present, but in addition there was a completely thrombosed sinus, a peri-sinous abscess and an extra-dural abscess. The points in favour of meningitis were: (1) continuous high fever and no rigors until after the operation; (2) the dull and drowsy condition of the patient; (3) the head retraction with pain on movement; (4) the lumbar puncture; and (5) optic neuritis.

During the further progress of the case several points suggested either an extra-dural abscess or a brain abscess. They were: sub-normal temperature and pulse; the ocular paresis; the condition of the reflexes; headache and vomiting; hæmorrhage into the left optic disc; and the variable amount of discharge from the mastoid wound. The giddiness and nystagmus were most likely due to a localised labyrinthitis caused by an injury to the labyrinth during the first operation. The absence of rigors with a totally blocked sinus is worthy of note.

The last case is a further instance of diagnostic difficulties.

CASE 3.—The patient, a male, aged 4½ years, was sent to hospital by Dr. G. Thomson of Ealing. The boy had been operated upon at another hospital for tonsils and adenoids. Fourteen days later the maxillary glands on the right side of the neck commenced to swell and eventually they broke down, forming an abscess, which was opened. During the following week both ears began to discharge. The patient was on June 1st, 1909, admitted to the Central London Throat and Ear Hospital under the care of Dr. Jakins. He was evidently in great pain and was extremely restless. The face was drawn and pinched, and the cheeks were flushed. The temperature was 100° F., and the pulse was 120 and irregular. There was profuse discharge from both ears, with some tenderness of the right mastoid, but no swelling or redness. A large mass of broken down glands in the neck was still discharging freely. There had been no rigors or sickness. Consciousness was quite clear, but the child complained of pain in and behind the right ear.

Operation.—Cortical mastoid right. A post-auricular incision was carried down into the neck to include the old incision made for the abscess. The bone was soft and carious. The antrum when opened was found to contain pus under pressure; the lateral sinus was exposed and was found to be completely thrombosed with granulations all round. As the thrombus consisted of a healthy clot it was not removed, nor were the granulations over the sinus curetted. The bridge was not removed. The wound in the neck was laid freely open and the glands were well scraped. The whole wound was then plugged and left open. On June 2nd the temperature was rising, and the patient was still very restless and in pain. His

general condition remained the same. The wound when dressed discharged freely. Ankle clonus was present on both sides. On the 3rd the temperature was oscillating and the pulse was rapid and irregular, but there were no rigors. The discs were normal. On the 10th there were no rigors but great oscillations of temperature, an evening rise to 103° or more, falling in the morning to normal. The patient complained of headache and of pain in the left ear, but there was no sickness. The chest was examined with a negative result. On the 12th a second operation was performed, Dr. Jakins deciding to explore the left mastoid. The usual incision behind the ear was made and the bone was exposed. The antrum was opened and was found to contain pus under pressure, the surrounding bone being soft and carious and easily removable with a sharp spoon. The lateral sinus was not exposed. The wound was plugged and left open. There was a rise of temperature in the evening to 104°. On the 13th the temperature was still remittent in type but there were no rigors. There was slight head retraction. The patient complained greatly of headache, which was principally occipital. There was no impairment of consciousness. On the foregoing symptoms it was decided to investigate the condition of both sinuses. A third operation was performed on the 14th. The sinus of the right side was first examined and was found to be perfectly patent, although only a fortnight previously it was completely thrombosed. After plugging the right wound the left sinus was investigated, and as its wall appeared to be healthy and as it pulsated freely it was not interfered with. There was great sickness for several hours after the operation with subnormal temperature and pulse. On the 16th the sickness continued, but with no rigors, and there were profuse and marked perspirations, which were limited to the head. Tache cérébrale was well marked; Kernig's sign was present. Ankle clonus was present on the left side. The knee-jerks were inactive and the urine contained a trace of albumin. The child was perfectly conscious and bright. From the 17th to the 27th the temperature continued to oscillate, the oscillations gradually getting less. The lungs were again examined with negative results. The temperature slowly sank to normal. On July 1st the temperature was normal and both wounds had practically healed. The patient now returned home. When seen on Dec. 28th the boy was found to have gained greatly in weight and the hearing on both sides was normal. He looked the picture of health.

The principal points here are: (1) the remittent temperature with free perspiration, but absence of rigors; (2) the headache and sickness; (3) the absence of optic neuritis; (4) the presence of Kernig's sign, but no symptom of meningitis beyond this; and (5) the absence of Griesinger's symptom.

In conclusion, I should like to point out that in none of these cases was the internal jugular vein tied. Should rigors continue after opening the lateral sinus and the removal of clot, whether septic or not, then, and not before, is the time to ligature the vein.

Devonshire-street, W.

THE TREATMENT OF CHOLERA ASIATICA WITH AN ANTI-ENDOTOXIC SERUM.

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VARIOUS attempts have been made to prepare an anti-cholera serum for the treatment of cholera asiatica. Under ordinary conditions the cholera vibrio produces little or no toxin, and an anti-microbic serum prepared by immunisation with cultures has been found to be of no practical value.

Some years ago Metchnikoff, Roux, and Salimbeni [1] found that by cultivating the cholera vibrio in a medium consisting of a gelatine-salt-peptone mixture a feeble extracellular toxin is formed. With this toxin horses were immunised and the serum obtained was proved to possess immunising and curative properties experimentally when tested on young suckling rabbits which were found to be susceptible to infection with the cholera vibrio. In the epidemic of cholera in Russia last year Salimbeni [2] employed this serum and considers that it is undoubtedly of value. The dose was 50–100 c.c. administered intravenously in salt solution (150–500 c.c.).

Bran and Denier [3] also obtained a cholera toxin by the use of a medium consisting of horse serum with an addition of 10 per cent. defibrinated horse blood.

The late Dr. Allan Macfadyen [4] found that by the trituration of cholera cultures in the presence of liquid air the intracellular cholera juice or "cholera endotoxin" possessed decided toxic properties and by the immunisation of animals an anti-endotoxic serum was obtained which possessed considerable protective power as well as agglutinative and bacteriolytic properties. Through the kindness of Mr. Wellcome, I was able last year, at the Wellcome Physiological Research Laboratories, to immunise a horse by the Macfadyen method with cholera endotoxin prepared by the trituration of virulent cholera cultures obtained through Dr. Haffkine from India.

This anti-endotoxic serum experimentally possessed considerable protective and curative powers tested on guinea-pigs. Thus 0·0001 c.c. and 0·5 c.c. of serum protected against 10 and 50 lethal doses respectively of living cholera culture injected simultaneously intraperitoneally into guinea-pigs. Curatively 1 c.c. of the serum saved the life of a guinea-pig inoculated intraperitoneally with four lethal doses of living cholera culture six and a half hours previously.

Through the kindness and interest of Madame Sieber, of the Imperial Institute of Experimental Medicine at St. Petersburg, a trial of this serum was made on nine cases of cholera which occurred during the epidemic of last year in Russia. The patients were in the Obuchar Hospital, St. Petersburg, under the care of Dr. Stühlern, and I am indebted to him for notes of the cases and for permission to publish them. The following is a record of the cases (a verbatim translation of Dr. Stühlern's notes):—

CASE 1.—Cabinet-maker, alcoholic subject, aged 40 years. Suffered from premonitory symptoms for a fortnight, then acute onset, with cramps, pulsus parvus, and cyanosis. *First infusion*, 24 hours after the commencement of the attack. 3 litres of 0·7 per cent. salt solution with 50 c.c. of serum given intravenously (42° C.), together with 25 c.c. of serum subcutaneously. *Second infusion*, 24 hours after the first infusion. 200 c.c. of salt solution with 25 c.c. of serum, subcutaneously. *Third infusion*, 24 hours after the second infusion. 300 c.c. of salt solution with 25 c.c. of serum subcutaneously. The first infusion produced decided improvement. The patient recovered.

CASE 2.—Goldsmith, alcoholic subject, aged 48 years. Acute onset, with pulsus parvus, vox choleraica, cramps, and cyanosis. *First infusion*, 18 hours after the commencement of the attack. 3 litres of salt solution with 50 c.c. of serum intravenously, together with 200 c.c. of salt solution with 25 c.c. of serum subcutaneously. *Second infusion*, six hours after the first infusion. 2·5 litres of salt solution with 25 c.c. of serum intravenously. *Third infusion* (time not stated). 300 c.c. of salt solution with 25 c.c. of serum subcutaneously. *Fourth infusion* (time not stated). 2 litres of salt solution with 25 c.c. of serum intravenously. The patient passed into a comatose typhoid condition, developed facial erysipelas, and died on the sixth day of the disease.

CASE 3.—Agricultural labourer (*Erdarbeiter*), aged 28 years. Acute onset, pulseless, with cyanosis, vox choleraica, and cramps. *First infusion*, 20 hours after the commencement of the attack. 3 litres of salt solution with 50 c.c. of serum intravenously, together with 100 c.c. of salt solution with 25 c.c. of serum subcutaneously. *Second infusion*, six hours after the first infusion. 2·5 litres of salt solution with 50 c.c of serum intravenously. *Third infusion* (time not stated). 150 c.c. of salt solution with 25 c.c. of serum subcutaneously. The patient recovered.

CASE 4.—Cabinet-maker, aged 33 years. After premonitory diarrhœa lasting for 48 hours the cholera attack commenced, with cyanosis and small pulse. *First infusion*, 20 hours after the commencement of the attack. 2·5 litres of salt solution with 50 c.c. of serum intravenously, together with 150 c.c. of salt solution with 25 c.c. of serum subcutaneously (hæmorrhagic fæces). *Second infusion* (time not stated). 3 litres of salt solution with caffeine (*no serum*) intravenously. The patient died on the seventh day of the disease. Diphtheritic colitis was found post mortem.

CASE 5.—Waiter, aged 26 years. Cholera acutissima. *First infusion*, eight hours after the commencement of the attack. 3 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. *Second infusion*, seven hours after the first infusion. 3 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. *Third infusion*, 12 hours after the second infusion. 2·5 litres of salt solution with caffeine (*no serum*) intravenously. *Fourth infusion*, 12 hours after the third infusion. 2 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. The patient died (time not stated). Hæmorrhagic enteritis was present.

CASE 6.—Labourer, aged 20 years. The attack commenced 12 hours after premonitory symptoms. The patient was pulseless at the commencement of the treatment. *First infusion*, 12 hours after the commencement of the attack. 3 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. *Second infusion* (time not stated). 3 litres of salt solution with 25 c.c.

[1] Annales de l'Institut Pasteur, vol. x., 1896, p. 257. See also Salimbeni in Bactériothérapie, Vaccination, et Sérothérapie (J. B. Baillière et Fils, Paris, 1909), p. 347.

[2] Annales de l'Institut Pasteur, vol. xxiv., 1910, p. 34.

[3] Ibid., vol. xx., 1906.

[4] THE LANCET, 1906, vol. ii., p. 494. Also "The Cell as the Unit of Life" (J. and A. Churchill, 1908).

of serum intravenously, together with 25 c.c. of serum subcutaneously. *Third infusion* (time not stated). 3 litres of salt solution (*no serum*) intravenously. The patient recovered without "typhoidal" symptoms.

CASE 7.—Shoemaker, aged 15 years. The treatment was commenced six hours after the beginning of the attack. *Infusion*, six hours after the commencement of the attack. 2 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. The patient made an uncomplicated (*glatte*) and speedy recovery.

CASE 8.—Tradesman (*Händler*), aged 16 years. At the commencement of the treatment the patient was pulseless. *First infusion*, 24 hours after the commencement of the attack. 2 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. *Second infusion*, seven hours after the first infusion. 1 litre of salt solution with 25 c.c. of serum intravenously. *Third infusion*, 12 hours after the second infusion. 25 c.c. of serum subcutaneously. The patient made an uncomplicated and speedy recovery.

CASE 9.—Master shoemaker, alcoholic subject, aged 43 years. Cholera acutissima. At the commencement of the treatment the patient was pulseless. *First infusion*, 12 hours after the commencement of the attack. 3 litres of salt solution with 25 c.c. of serum intravenously, together with 20 c.c. of serum subcutaneously. *Second infusion*, six hours after the first infusion. 1·5 litres of salt solution, with 25 c.c. of serum intravenously. *Third infusion*, eight hours after the second infusion. 2 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. The patient died on the third day of the disease.

It will thus be seen that of the nine cases four died and five recovered. The number is too small to base any conclusion as to the value of the serum, but it seems worthy of more extended trial. It will be noted that not more than 75 c.c. of serum was given at one time. This was because the serum contained 0·3 per cent. of trikresol, and Dr. Stühlern feared that the preservative might give rise to toxic symptoms if larger doses of the serum were given. The dose employed by Salimbeni was 50–100 c.c., and one would like to see a similar dosage of the anti-endotoxic serum employed.

King's College, London.

THE ACTION OF CHLORINE UPON WATER CONTAINING THE CHOLERA VIBRIO.

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AT the suggestion of Dr. J. C. Thresh and under his direct supervision I have carried out in the public health laboratories at the London Hospital Medical College a series of experiments to ascertain whether the cholera vibrio was as susceptible to the action of chlorine as Dr. Thresh has shown the bacillus coli and the bacillus typhosus to be.

The results of these experiments, which have extended over a period of more than three months, are embodied in the subjoined table and require but little explanation. In each case one or two drops of a 24 hours' broth culture of the cholera vibrio were added to 1 litre of the water used. The requisite quantity of solution of chlorine was then added, and at definite intervals of time 1 c.c. of the solution was used for making an agar plate, and 100 c.c. were poured into a flask containing 11 c.c. of a concentrated peptone salt solution. If any turbidity occurred in this broth within 48 hours it is indicated by the first + sign in the appropriate columns in the table. Subcultures were then made, sometimes a second and a third, in order to ascertain whether the cholera vibrio were present. If present it is indicated by the second + sign. This portion of the investigation was more difficult than had been anticipated, since the very dilute chlorine solution fails to kill certain spore-bearing organisms which grow with great rapidity in peptone water and produce a pellicle. Their presence also prevents the characteristic cholera-red production, but under the microscope they are readily distinguished from the cholera vibrio. Where any growth occurred upon the agar plates, these were used for inoculating gelatin and peptone solution. In no instance was the vibrio obtained from such a plate, even when 10,000 or more had been added to each cubic centimetre of the water. In about half the experiments a filtered cholera broth was used; in the others the broth was unfiltered.

Some experiments made by Dr. Thresh appeared to show that except in waters of a high degree of organic purity, 1 part of chlorine in 2,000,000 of water was not to be depended upon to destroy the cholera vibrio, but that 1 part per 1,000,000 seemed to be effective in ordinary waters. For this reason smaller quantities than 1 per 1,000,000 were rarely used. The results were not positive in all cases; it will be observed that in four instances in which 1 part per 1,000,000 of chlorine was used the cholera vibrio was recovered from 100 c.c. of the treated water, and in one of these cases it was found in the sample which had been in contact with the chlorine for 30 minutes, whereas it could not be found in the 10 and 20 minute samples from the same flask; these isolated instances were probably associated with the introduction of portion of the pellicle from the broth culture, for in that particular case in which the three flasks remained infected, and in that case only, the culture was added by means of the platinum loop, to which the pellicle readily adheres. Disregarding this and recognising the fact that no potable water is ever likely to contain more than a small fraction of the number of vibrios introduced into the waters examined, I conclude that most waters, if treated with 1 part of chlorine per 1,000,000 for 15 minutes, would be free from the cholera vibrio. Where water contains so much organic matter as to consume this amount of chlorine, then more will be needed, sufficient to oxidise the organic matter, and leave 0·5 to 1 part of chlorine available for sterilising purposes.

The Action of Chlorine on the Cholera Vibrio.

Water used.	Bacteria in 1 c.c. of water used.	Number of cholera vibrios added to each c.c.	Chlorine added per litre.	Bacteria from 1 c.c. of treated water after—			Growth from 100 c.c. in peptone water.		
				10 min.	20 min.	30 min.	10 min.	20 min.	30 min.
			mgr.						
Boiled tap water.	0	3,810	1	0	0	0	– –	– –	– –
,,	0	4,300	1	1	0	0	– –	– –	– –
,,	0	5,650	1	0	0	0	– –	– –	– –
,,	0	1,265	1	0	0	0	– –	– –	– –
,,	0	5,540	1	1	1	1	+ –	+ –	+ –
,,	0	4,720	1	0	0	0	– –	– –	– –
,,	0	8,040	1	0	0	0	– –	+ –	– –
,,	0	1,990	1	0	0	0	– –	– –	++
Boiled distilled water.	0	4,140	1	1	0	1	+ –	+ –	+ –
Tap water.	?	710	1	0	0	3	+ –	+ –	+ –
,,	?	5,140	1	0	0	1	+	+ –	+ –
,,	?	10,000	1	0	0	0	++	++	++
,,	9	7,920	1	0	0	0	+ –	+ –	+ –
,,	4	18,000	1	0	0	1	+ –	+ –	+ –
Boiled tap water.	13,400 B. coli added.	10,300	1	1			+ –		
,,	,,	,,	0·5	46			++		

The addition of a little sodium bisulphite, or of sodium thiosulphate, instantly destroys the excess of chlorine, but in most cases it would probably be preferable to remove this excess by filtering through iron filings, or, better still, agitating with iron filings and then passing the water through some kind of filter to remove the trace of oxide of iron formed and any suspended organic matter contained in the water.

Yarmouth.

NEW EDITION OF THE RUSSIAN PHARMACOPŒIA.—The Russian Medical Council has issued a new (6th) edition of the Russian Pharmacopœia, which is to be the governing work for pharmacists, medical establishments, and medical men in European Russia from Dec. 1st (14th) next, and in the Siberian governments and in the Caucasus from Jan. 1st (14th), 1911.—The *Gazette* of the Russian Distillers' Association says that the Russian Medical Council is examining the question of freeing from excise spirits required in medicines. It is shown that Russian pharmaceutical factories use but little alcohol. But there is a very large importation of medical preparations from abroad, where they are made with "excise free" spirit. Now in Russia, owing to the heavy excise on alcohol, many pharmaceutical products are made up with wood spirit, which is very injurious to health.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

Presidential Address.

A MEETING of this section was held on Oct. 18th, Dr. F. W. MOTT, the President, being in the chair. Dr. Mott opened the session by a demonstration and address upon the Comparative Neuro-pathology of Human Trypanosomiasis and Syphilis. He referred to the close biological relationship of trypanosome and spirochæta infection: the primary sore at the point of inoculation, the period of incubation, the local gland enlargement followed by a general infection first of the lymph stream, then of the blood associated with erythematous rashes due to migration of the parasites, fever, and constitutional disturbances. Dr. Mott then referred to the mode of transmission of human trypanosomiasis and the researches of Kleine, confirmed by Bruce, concerning the glossina palpalis and the multiplication of the parasite in the gut of the fly, so that it seems there is not only a specific trypanosome, T. gambiense, but a specific fly, the glossina palpalis. The mal de coit or dourine of horses was next alluded to as showing that a trypanosome—the T. equiperdum—had acquired a habit of multiplying in the mucus of the mucous orifices, and so perpetuating the species by transmission from one animal to another by coitus. He hinted at the possibility that the spirochæta pallida might have once been conveyed by a biting insect (we know the spirochæta of tick fever is), but, like the T. equiperdum, it had acquired a new mode of transmission and thus of perpetuating the species. The affections of the nervous system produced by human trypanosomiasis and syphilis are especially interesting, for they present many points of similarity in their clinical symptoms and morbid histological changes; moreover, it is known that the drugs which can avert affections of the nervous system in the one disease, syphilis, can avert in rare circumstances the other disease. The first most striking point in human trypanosomiasis (and he used this term instead of sleeping sickness, which he said should be abolished) is the fact that on the one hand practically all cases of human trypanosomiasis, whether treated or untreated, end sooner or later in a chronic inflammatory affection of the lymphatics of the central nervous system, giving rise to a characteristic train of symptoms progressive in their course and fatal in their issue, whilst on the other hand spirochæta infection produces disease of the nervous system in only about 5 to 10 per cent. of the cases of syphilis even untreated, and considerably less if treated. We may speak of two forms of nervous lesions: (1) the true syphilitic due to the action of the specific organism; and (2) the parasyphilitic due to a bio-chemical change in the body whereby the neurons die prematurely. Whereas it may be affirmed that in every case of sleeping sickness there is invasion of the subarachnoid space by the trypanosome, in only about 4 or 5 per cent. is there invasion of the subarachnoid space by the spirochætæ, and then in all probability they are confined within the lymphatics and do not become free in the cerebro-spinal fluid as do the trypanosomes. Whereas it appears that neither arsenic, antimony, nor mercury preparations will cure a patient who is suffering with sleeping sickness (that is, invasion of the cerebro-spinal fluid by the trypanosomes) in most instances arrest, and in some cases cure, is effected by the same drugs in syphilitic affection of the lymphatics of the central nervous system. Dr. Mott said that if the two organisms be observed by the ultramicroscope it would be noticed that the trypanosomes were extremely active, moving rapidly all over the field, whereas the spirochætæ progressed slowly in a screw-like fashion around their long axis. The former then would easily penetrate the delicate walled capillaries and escape into the cerebro-spinal fluid; moreover, observation showed that whereas trypanosomes could usually be easily found in the blood, spirochætæ cannot; they seemed to be only able to multiply in the lymph spaces and channels. So that the chances of affections of the nervous system in syphilis are infinitely small as compared with the chances in human trypanosomiasis. But in other forms of trypanosomiasis he was not aware that the cerebro-spinal fluid did become infected, and the deadly nature of infection by the gambiense might be due to the fact that it had acquired the habit of migration into the subarachnoid space. In both syphilis and human trypanosomiasis there was a polyadenitis; both diseases were characterised by a lymphocytosis in the blood, and when the nervous system was invaded by a lymphocytosis in the cerebro-spinal fluid. Dr. Mott said that organic arsenical, antimonial, and mercury preparations which had a trypanosomocidal and spirillocidal action might owe that property to either stimulating or phagocytic function, for those metals might have an affinity for the phosphorus containing lipoids of the osmotic membrane forming the periplasium of those organisms. Moreover, it was possible that the toxic effects of organic arsenical preparations so widely used for the cure of those diseases might be due to association of the poison with the lecithins of the nervous system. In trypanosomiasis it was extremely rare to hear of a recovery, but one had probably recovered that he knew of. The lesions of the central nervous system in sleeping sickness resembled in some ways both the lesions of syphilitic meningo-encephalitis and the meningo-encephalitis of general paralysis. But there were striking differences to both. Examination of the lymphatic glands in trypanosomiasis showed the presence of the organisms, and whether it was simply due to their mechanical presence or to a toxic secretion, a chronic inflammatory condition was set up in the glands and lymph channels of the body. The characteristic lesion in the brain and spinal cord was a diffuse infiltration of the perivascular and meningeal lymphatics of the brain with lymphocytes and plasma cells; this was occasioned by a proliferation of the endothelial cells and connective tissue elements of the lymphatic sheath of Robin and the pial sleeve; it is accompanied by a marked proliferation and hyperplasia of the neuroglia tissue which extended from the periphery of the central nervous system inwards. There was some degree of neuronic atrophy, but it was in no way proportional to the chronic inflammatory change. There were little or no naked-eye changes in the brain in uncomplicated cases. Dr. Mott contrasted that with syphilitic meningo-encephalitis where besides the meningo-encephalitis there were endarteritis and tendency to tumour formation. In general paralysis there was a perivascular infiltration of lymphocytes and plasma cells, resembling that of sleeping sickness, except that it favoured the cortex, whereas in sleeping sickness it was much more marked in subcortical structures. In general paralysis there was a neuroglia proliferation and hyperplasia proportional to the neuronic atrophy which was extreme and proportional to the degree of dementia. Rod cells, sprouting capillaries, and new vessels were seen in abundance.

CLINICAL SECTION.

Exhibition of Cases.—New Methods of Reading Arterial Blood Pressure.

A MEETING of this section was held on Oct. 14th, Mr. A. PEARCE GOULD, the President, being in the chair.

Mr. ALBERT CARLESS showed a case of Adiposis Dolorosa (?). The patient was a female, aged 31 years, who came under observation in March last for piles. She was admitted to hospital and operated on satisfactorily. She was always anæmic, with a poor circulation, her fingers and hands readily becoming blue in cold weather. From time to time she had noticed that the tissues beneath her chin became somewhat swollen, but that did not last. At the time of operation she had a small fatty growth in the back of the neck in the suboccipital region, but it caused her no pain or inconvenience. Between the months of April and June a marked fatty development occurred, affecting mainly the shoulders, the back of the neck, the root of the neck, the back, and the front of the abdomen. Those diffuse fatty masses had been decidedly painful and tender, and there had been some degree of neuralgic pain in the arms. The progress was very rapid up to June, but had been slower since. The most marked development had been around the shoulders and upper parts of the arms, and the disproportion between those regions and the parts below was very great. The periods had been regular and not specially painful, but the loss was not great; she missed one or two periods after the operation. The thyroid body appeared to be atrophied. The skin acted well, especially the arms and

hands. The patient generally felt languid and unfit for work. She had taken thyroid tabloids and pituitary extract. The former seemed to do her good and control the increase in size, but worried her eyes somewhat; the latter had no effect. She had increased recently in weight by five pounds.

Dr. H. D. ROLLESTON showed a case of Symmetrical Lipomatosis. The patient was a man, aged 45 years, without a history of syphilis. He was admitted for distension of the abdomen and some ascites, which had since passed off. There were almost symmetrical fatty masses over the clavicles, neck, the shoulders, arms, elbows, the lower abdomen, sacral region, and the upper and inner aspects of the thighs; some of them were large and diffuse, others small and circumscribed. The veins over the chest and the lipomas in the neighbourhood of the clavicles were dilated. The mammæ were considerably enlarged. Some of the large fatty masses appeared to be diffuse, others to be composed of separate tumours which were becoming confluent. Except in one or two spots there was no tenderness. The tumours were not spontaneously painful, and there had not been any local pain before the appearance of the tumours. The condition, therefore, was not adiposis dolorosa nor Dercum's syndrome. It approached but did not accurately correspond with Lyon's group of "diffuse symmetrical lipomatosis, with predilection for the neck." The fatty mass about the left clavicle was larger than its fellow, and was the first to appear. Knee-jerks, normal; sensation, normal; pulse, 70; temperature, 97° F.; blood pressure, 110 mm. Hg; urine, normal; weight on admission, 13 stones 7 pounds, now 11 stones 9½ pounds. Dr. G. Allpress Simmons reported that the screen examination showed a normal translucency of both lungs; the excursions of the diaphragm on both sides, even on deep inspiration, were not more than half an inch, and the arches did not flatten. A skiagram taken from the front showed some mottling of the inner half of the right lung towards the base. There was, perhaps, slight dilatation of the aorta, but no evidence of any intrathoracic tumour. A lateral skiagram of the neck did not show calcification. In regard to treatment the patient had recently been on small doses of thyroid extract (one and a half grains) and had had X rays to the right side of the body.

Dr. ALFRED M. GOSSAGE showed a case of Adiposis Dolorosa (?). The patient was a woman, aged 54 years, who had always suffered with pains in the legs. Catamenia became irregular at the age of 44 and ceased at the age of 48. From the age of 44 she had become very stout and the legs had become much more painful, so that it was difficult for her to walk. The patient was obese and had numerous fatty swellings on the legs and thigh, which were painful and tender. Over the rest of the body the adipose tissue was evenly distributed, but there was general tenderness. There was not any mental impairment.

Dr. H. G. TURNEY described a case of Physiological Obesity which developed into a case of Adiposis Dolorosa.

Mr. CARLESS, in commenting on the case exhibited by Dr. Rolleston, gave details of a case in which the venous enlargement was ascribed to pressure in the mediastinum.—The PRESIDENT remarked that in Dr. Rolleston's case the blood in the enlarged veins ran from the shoulder to the sternal region, which was against the condition being due to mediastinal pressure.—Dr. F. PARKES WEBER pointed out that typical cases of adiposis dolorosa occurred nearly always in women, whilst diffuse lipomata of the neck were found nearly always in males.—Dr. ROLLESTON referred to the fact that some cases of myxœdema developed an extraordinary degree of adiposity.—Dr. GOSSAGE said that the patient he showed had not improved under thyroid treatment.

Dr. GEORGE OLIVER demonstrated two New Methods (Auditory and Visual) of Reading Arterial Blood-pressure. The auditory method consisted of an air-tight tambour strapped over the brachial artery at the bend of the elbow below the armlet, the compression of which developed a loud throb or thud; and binaural auscultation of the pressure area of throbbing which afforded readings of the diastolic and systolic arterial pressures—half that area indicating the diastolic, and the cessation of the throb the systolic pressure. The readings thus obtained were more delicate, more definite, and more accurate than those afforded by extinction of the pulse (digital) and by the optimum oscillation. The visual method (the development of oscillation in a spirit index and its cessation) was also derived from the auditory tambour. It afforded a reading of the systolic arterial pressure (the armlet being applied to the arm or forearm) as sensitive as that furnished by the auditory method. It was suggested as a corroborative or alternative method, and might be useful when the hearing was impaired or when noises were distracting for auscultation.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Presidential Address.—Adenomatosis Vaginæ.—Vaginal Secretion in Infants.

A MEETING of this section was held on Oct. 6th, when the President, Dr. H. MACNAUGHTON JONES, delivered his Presidential Address.

Dr. VICTOR BONNEY and Mr. BRYDEN GLENDINING communicated a paper on Adenomatosis Vaginæ, a hitherto undescribed condition. A woman, aged 42 years, had suffered for 12 years from a persistent vaginal discharge of a transparent, sticky nature. The entire mucous surface of the vagina and portio vaginalis of the cervix was red and granular, being studded all over with small cysts, varying in size from that of a pin's head to that of a large pea. A continuous stream of mucous fluid like the white of an egg exuded from the diseased surface, in quantity about 6 ounces per diem, specific gravity 1014. Microscopical examination of the vaginal wall revealed numerous glandular spaces lined by a single layer of tall columnar epithelium, actively mucinogenetic, as proved by their reaction to mucicarmine. Here and there the communication of these glands with the surface of the mucosa could be demonstrated. After a careful consideration of several possible explanations of this rare condition Dr. Bonney and Mr. Glendining came to the conclusion that a congenital peculiarity of the cells lining the vagina existed, in virtue of which they possessed facultative gland-forming powers similar to those covering the vaginal cervix in immediate proximity to the external os uteri. This power had remained dormant until excited by inflammation or the effects of child-birth—a process analogous to that by which a glandular erosion of the cervix is formed. The paper was illustrated by drawings and micro-photographs shown on the epidiascope.

Dr. G. DRUMMOND ROBINSON read a short communication on Some Observations on Vaginal Secretion in Infants. The paper was based on the examination of the vaginal secretion of 50 infants varying in age from 30 minutes to 14 days. Within the first 48 hours the secretion was invariably found sterile, and sterile secretion was found as late as the thirteenth day. Dr. Robinson suggests that the organisms found in the vagina during the first fortnight after birth may really have been carried up from the vulva at the time when the cultures were made. Of the 44 cases in which the secretion was found sterile, in 36 (81·8 per cent.) the reaction was acid, in 5 (11·3 per cent.) it was alkaline, and in 3 (6 8 per cent.) it was neutral. The conclusions drawn from these observations are: (1) That the vaginal secretion is sterile for the first 48 hours after birth, and probably for a much longer period; and (2) that the vaginal secretion of infants is acid in the majority of cases, and that this acidity is not due to the action of micro-organisms.

The PRESIDENT then delivered an address on the Lessons of a Session, in which he pointed out the advantages to the section of the publication of a quinquennial digest of its proceedings, so as to rescue from oblivion in the catacombs of the Transactions of the Society the original work done during the previous years. He proposed to illustrate his meaning by giving such a brief digest of one session's work, in the original communications presented, the clinical histories detailed, and the pathological specimens exhibited. Dr. J. Curtis Webb's important review of the whole subject of Electro-therapy in Gynæcological Practice had shown that in ionisation we have an efficient therapeutic agent in cases specially selected for its employment. His paper, however, and the discussions which followed it, tended to prove that such electropathic treatment demands primarily three essential conditions—special training and skill in the applications of the kind of electricity used, its nature and quantity; accurate diagnosis and differentiation of the states in which it is contra-indicated; judgment as to its continuance or abandonment according to the effect it produces. Dr. Comyns Berkeley and Dr. Victor Bonney

drew, for the first time, a clear line of demarkation between the two affections Leucoplakic Vulvitis and Kraurosis Vulvæ. The relation that the pathological processes in each have to carcinoma vulvæ was compared, proving that coitus, sterility in younger women, advanced life, and in his (the President's) opinion prolonged vaginal discharge, are potent factors in causing the malignant change. Once its presence is suspected the landmarks for removal should lie completely outside the diseased area.

Justification for Cæsarean Section in Contracted Pelvis, in Placenta Prævia, and Eclampsia had been most thoroughly discussed through the communications of Dr. Hastings Tweedy, Dr. Henry Jellett, and Dr. F. J. McCann. In addition they had now before them the discussion opened by Dr. Amand Routh as "reporter" at the International Congress just held at St. Petersburg. These views raised the whole question of the indications for, and the relative advantages of, the classical and the extraperitoneal operations, as compared with symphysiotomy, pubiotomy, hysterotomy, and the usual obstetrical methods, such as the induction of labour, craniotomy or cephalotripsy, and high forceps. The Master of the Rotunda was strong in his denunciation of these latter steps in contracted pelvis, and he defined the degrees of deformity in which he considered the various operations were indicated. From the opinions expressed at the meeting of the American Medical Association in 1909, with those declared at the three meetings of this section this year, and at the recent Congress, we can summarise the present views of obstetricians on the indication for Cæsarean section in contracted pelvis, placenta prævia, and eclampsia. 1. Greater care generally should be taken in the early months of pregnancy to estimate approximately the pelvic capacity for labour at full term. 2. The time has come when the general indications for Cæsarean section, symphysiotomy, pubiotomy, hysterotomy, and the ordinary obstetric methods of dealing with contracted pelvis can be more exactly defined. 3. There is still a useful place for induction of labour, craniotomy, or cephalotripsy, and high forceps application. While ever regardful of the life of the child, that of the mother always takes precedence in determining our selection of the manner of delivery. 4. Cæsarean section has a place in the management of placenta prævia only when (*a*) this complication occurs under circumstances that would in any case demand the operation; (*b*) when the character of the presentation and nature of the placental attachment, with other conditions, render the classical methods of treatment impossible to carry out, or their practice more dangerous than operation. It would appear that the risk to the mother, which must be our first consideration, has been exaggerated by those who advocate the step. 5. Cæsarean section has a place in the treatment of eclampsia in exceptional cases, and these are included in the indications suggested by Dr. McCann—viz., the time of occurrence—before or during labour; the severity and rapidity of the fits; considerable disproportion between the head and pelvis; an undilatable cervix; and a moribund mother and a living child. 6. As to the advantages and disadvantages of the symphysic and the classical operations, Professor Bumm at the International Congress summed these up. In the former the avoidance of the peritoneum and easier suture of the cervix, but there is greater difficulty in technique, greater risk to the bladder, and the delivery of the fœtus more difficult.

In the discussion on Mrs. Scharlieb's statistics of Malignancy in Ovarian Tumours, it was shown that out of 3481 cases collected from various clinics 9·9 per cent. were malignant, and that in a fairly large proportion the degenerative change occurred primarily in the ovary. In ten instances remarkable Shrinking of Myomatous Tumours of the Uterus was shown to have occurred by Dr. Arthur Wallace. While this may occasionally happen, the statistics now published of some 8000 tumours prove that degenerative changes and danger to life from these growths increase directly in proportion to the advance in years after 40 to 50.

Dr. Macnaughton Jones concluded by referring to the interesting correlations between the pathological appearances seen in nuclei arising from the syncytium and the cells in chorioepithelioma which were demonstrated from a case of ruptured tubal pregnancy by Mr. T. Carwardine, to the possibility of treating rupture of the uterus successfully by vaginal suture as demonstrated by Mr. Herbert J. Paterson, and to the occurrence of pelvic hæmatocele, apart from ectopic gestation, as illustrated by Dr. Cuthbert Lockyer. Several clinical cases of great interest were referred to by the President; some bore on the question of operation on myoma complicating pregnancy or labour, as in Dr. Philip Turner's case of hysterectomy successfully performed 63 hours after labour for infection arising out of a necrobiotic fibroid, also Dr. H. Russell Andrews's successful myomectomy in the third month of pregnancy, complicated by a retroversion, hysterectomy for an incarcerated necrobiotic fibroid complicating pregnancy (Dr. T. W. Eden and Dr. T. G. Stevens), and the large myomatous tumour distending the vagina successfully removed during labour by Dr. Griffith. One of themost interesting cases brought forward he considered was that in which Dr. Herbert Spencer's posterior Cæsarean section was followed by hysterectomy for fibroids in the thirty-eighth week; the living fœtus and placenta having been extracted the degenerated and greatly thickened uterus was removed with safety to mother and child. He mentioned the following exceptionally interesting specimens: a complete transverse rupture of the fundus uteri (Dr. Lewers), carcinomatous degeneration in an adenofibromatous polypus (Mr. J. H. Targett), spheroidal-celled carcinoma of the cervix (Dr. Griffith), atresia in one-half of a double uterus (Dr. Lewers), abscess of the ovary due to infection from amœba coli (Mr. Barris and Dr. Williamson), ovarian pregnancy (Dr. E. Hastings Tweedy), implantation teratoma (Dr. V. Bonney), and several cases of ectopic gestation and molar pregnancy.

A vote of thanks to the President, proposed by Dr. G. E. HERMAN, and seconded by Mr. W. D. SPANTON, was carried by acclamation, and the meeting then adjourned.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Oct. 13th, Dr. M. Handfield-Jones, the President, being in the chair.—Dr. E. G. Graham Little showed two cases of Rodent Ulcer, one of which had been treated with ionisation and one with CO_2 snow. The first case, a man about 45, had had the ulcer six years. When first seen it was of about the size of a threepenny-piece, was typical in appearance, and was situated on the cheek near the nose. Two applications of zinc ions, of an average duration of 20 minutes each, had been made with an interval of a fortnight. The result had been very successful, only a faint atrophy being noticeable in the site of the former ulcer. Six months had elapsed since the last treatment, and there was no sign of recurrence. The man had felt very little pain during the applications, for which about 5 to 7 milliampères of current had been used. The second case was in a woman, aged 40; the ulcer was of about seven years' duration, typical in appearance, and seated at the outer margin of the right orbit. Three applications of CO_2 snow had been made, lasting 20 to 25 seconds each and separated by intervals of 10 or 14 days. The last treatment was six weeks ago and there was now no trace of disease, the site being a little red still, but otherwise apparently quite healed. Dr. Little also showed a case of Lupus Erythematosus of long duration; the patient, a man, aged 74 years, had been treated for the complaint 40 years ago by the late Erasmus Wilson. When first seen the face, ears, and backs of both hands were affected. CO_2 snow had been applied for 20 to 30 seconds at intervals of about a week. The result had been strikingly good: the hands had been practically cured as well as parts of the face; private affairs caused a temporary interruption in the treatment, but he had now returned for a further course and a treatment was given three days ago, and the blisters which resulted from the application were still partly unbroken. The method was exceedingly useful, and this case was a good illustration of the success which might be anticipated even in very chronic cases and in elderly persons.—Dr. A. M. Gossage showed a case of Splenomegalic Polycythæmia.—Mr. Peter L. Daniel showed two cases of Hirschsprung's Disease (Idiopathic Dilatation of Colon) Affecting the Rectum. The first case had been operated upon two and a half years ago; she was then 12 years old. She was born with an imperforate anus, and a history of severe constipation from the time this was perforated existed. The rectum and adjacent sigmoid were excised and an end-to-end anastomosis was carried out with excellent results. The second case, also a girl, aged 13 years, in a milder stage of the

affection, was reacting to injections of eserine (grain 1/100) three times a week so well that until this proved ineffective nothing further was intended. Skiagrams of the condition before and after operation were shown, also the excised rectum, which, with contents, weighed 6 pounds.—Mr. L. B. Rawling showed: 1. A case of Tumour of the Lower Jaw with Egg-shell Crackling; a skiagram showed the wisdom tooth (unerupted) situated at the top of the tumour. Mr. Rawling considered the diagnosis lay between a dentigerous cyst and a myeloid sarcoma; he proposed to operate. 2. A Cyst in the Shoulder presenting through the fibres of the deltoid beneath the scar of an old operation incision. It was at first considered that it might be a hernial protrusion of muscle, but an exploratory puncture produced fluid containing some melon-seed bodies. He considered it was a tuberculous affection and probably a protrusion of a pouch of synovial membrane from the joint itself; the nature of the previous operation was unknown.—Mr. J. E. R. McDonagh showed several cases in which marked and intractable syphilis had been treated with an injection of "606," all with surprising and almost immediate success.—Mr. Haldin Davies showed: (1) A case of Tuberculide; and (2) a case of Pigmented Nævus.—Mr. S. Maynard Smith showed a case of Cirsoid Aneurysm of the Scalp; this had been quite small at birth but after a blow on the head had considerably increased in size; he had treated it by multiple ligature, causing its almost complete disappearance.—Mr. E. Laming Evans showed a case of Congenital Upward Displacement of the Right Patella in a little girl.—The President showed some gynæcological specimens, and an interesting discussion followed.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held on Oct. 14th at the Radcliffe Infirmary.—Dr. Tibbs related the history of a case of Lymphatic Leukæmia which had ended fatally in the infirmary. The course had been very acute; there had been high temperature, a septic throat, and the blood picture of the large-celled type. A blood culture was negative. The interest of the case lay in the fact that post mortem the glands and the pericardium were found to contain a Gram-negative diplococcus, which it had not been possible to grow in pure culture. Several preparations from the case were exhibited. The question was whether the case was one of chronic leukæmia with a terminal septic infection, as three weeks previously the patient had been in his usual health, and the patient volunteered the statement that his glands had always been enlarged.—Dr. W. Collier then read a paper on the Therapeutic Use of Alcohol. Pharmacologically it was an irritant, and its action in this respect on the stomach was stimulant. It was doubtful whether, on the nervous system, alcohol stimulated first and depressed afterwards or depressed from the beginning. The essays of Crile and Gairdner had had a very marked effect in altering Dr. Collier's treatment of his own patients and, he thought, that of many other physicians. Preceding the crisis in a fever Dr. Collier thought that ammonium carbonate, digitalis, and strychnine were as efficacious as alcohol. For fainting it was perhaps the most accessible drug, though it possessed no advantages over the preparations of ammonia. As a hypnotic it was doubtful if it was ever as useful as veronal and other similar drugs. As a means of warding off syncope in slight operations such as tapping it was a useful drug. For children with diarrhœa it was a useful adjunct to other methods of treatment, and to the aged it might be given with impunity. In facial neuralgia two glasses of port wine daily often had a marked effect, and during convalescence good wine in moderation more quickly restored the strength of the patient. The present fashion of giving meat-wine was wasteful and expensive treatment, and offered in persons not taking it under medical orders a likely means of developing a habit. The alcohol consumed in institutions had been markedly lessened in the last 15 to 20 years. In the Radcliffe Infirmary in 1889, when 1399 patients had been treated, £117 had been spent on malt liquors and £91 on wine and spirits; 20 years later, when 2257 patients were treated, £9 had been spent on malt liquors and £51 on wine and spirits. The records of other hospitals all showed enormous reductions in the consumption of alcohol.—In the discussion which followed Mr. R. H. A. Whitelocke urged its vigorous use in all cases of septic poisoning.—Dr. F. G. Proudfoot doubted whether in slight operations ammonia preparations had the same effect as alcohol. He mentioned its diuretic action and the varying action of different preparations of alcohol, such as beer and whisky, in this respect. In digestion its action depended entirely on the individual.—Dr. W. J. Turrell urged its value for tiding over a period of great fatigue in long-continued muscular exercise; for instance, towards the end of a long bicycle ride. It was a valuable drug in children and old people. According to Graves, it was valuable if the pulse and respiration remained steady. He also thought that it was a valuable hypnotic and as a stimulant to the appetite in fatigue.—Mr. A. P. Dodds-Parker related that in the records of two physicians at a certain London hospital the percentage mortality in the patients of the one who gave alcohol freely was half that of another physician who withheld it. In septic cases he thought that it was of little use, and much preferred in his own practice to give lactose as a means of keeping the tissues of the body supplied with a minimum of food.—Dr. W. Duigan said that in his experience alcohol in asthenic conditions, as, for instance, bad influenza, was a valuable drug, and in continued fever of an asthenic type.—Dr. W. A. P. Waters mentioned its value in his hands after acute illnesses, especially in children.

Reviews and Notices of Books.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 37, Investigations on Bengal Dietaries, with Some Observations on the Influence of Dietary on the Physical Development and Well-being of the People of Bengal. By Captain D. McCAY, M.B. R.U.I., I.M.S., Professor of Physiology, Calcutta Medical College. Calcutta: Superintendent of Government Printing. 1910. Price Rs.2.6, or 4*s.* 3*d.*

THIS volume contains an account of a prolonged and exhaustive investigation into the composition and food value of the dietaries that are in use in the various jails in Bengal, with some valuable observations on the physiology of alimentation, and practical recommendations for improvement in existing conditions. The scope of the inquiry was to investigate the suitability of the diet scales prescribed for prisoners in Bengal. Most of the work done has related to the estimation of the nutritive value of the dietaries in use, and in particular to the determination of the digestibility, or absorbability, of the nutritive principles contained in them. It has been laid down by recent authorities on the physiology of nutrition (e.g., Atwater) that in foods most easy of digestion and absorption, such as meat, fish, and eggs, the protein is utilised to the extent of 97 per cent.; while with other articles, equally nutritious and necessary for the animal economy, such as bread, cereal grains generally, and fruit, its digestibility coefficient is 83 to 85 per cent., and with the leguminosæ about 76 per cent. The most important result of Captain McCay's investigation has been to prove that, as regards the protein of the dietary, the degree of its absorbability depends very largely on the actual quantity or bulk of the food consumed. This question of bulkiness is not of much moment in European and American dietaries, but in many parts of India and the East, and particularly in Bengal, it is of the first importance; the average weight of cooked food consumed in a day by a Bengali prisoner amounts to about 140 ounces, or more than 8½ pounds. (It should be remembered that the Bengali in jail is better fed than his friends and relations outside, but the character of the dietary is the same.) It was found that with this diet protein absorption was barely 55 per cent., instead of the theoretical 76 to 85 per cent. Another factor tends to reduce the net alimentary value of the Bengali's dietary. The energy value of a dietary is the total potential energy of the food minus that of the corresponding fæces and urine. With the dietaries universally in use in Bengal excessive fermentative changes take place in the carbohydrate

constituents while passing down the alimentary tract; sugar and starch are converted into carbon dioxide and fermentation products (acetic and lactic acids, &c.) of low caloric value, and a great deal of potential energy is lost. Moreover, intestinal troubles are extremely prevalent, leading to malnutrition.

After an introduction giving a *résume* of work that had been previously done in regard to Indian jail dietaries, and of the methods employed in the present investigation, the author describes the dietaries at present in force and gives their chemical composition; also their energy value as determined by means of the calorimetric bomb by Professor Benedict of Washington, an act of international scientific courtesy that is gratefully acknowledged. Then follows a detailed account of the experiments on the nutritive value of the dietaries, first in Lower Bengal jails, then in those of Behar. The Lower Bengal dietary consists of 26 ounces rice, 6 ounces *dal* (pulse), 6 ounces green vegetables, and condiments; it contains 93 grammes protein, 693 grammes carbohydrates, and 30·5 grammes fat, yielding 3508 Calories, a higher value "than any of the standard diets that have been formulated for Europeans," but the author shows that, by reason of the excess in carbohydrate (leading to excessive fermentation), the absorption of the protein is so much interfered with that its value is reduced to 60 or 65 grammes. This was proved by very numerous experiments. Batches of five or ten or more men were carefully observed, their urine analysed in five-day periods, and the metabolism calculated. In some series of observations not more than 50 per cent. of the nitrogen ingested was metabolised. The carbohydrates were gradually reduced in amount and a succession of observations made on the nitrogen excretion under the altered conditions. It was found that when the rice ration was 18 ounces (instead of 26 ounces) the nitrogen absorbed amounted to 8·5 grammes (instead of 7·5). "Any rice in the dietaries in excess of 18 ounces per man daily is not only useless but actually clogs the absorption of protein, so that the amount of nitrogen undergoing metabolism actually falls."

In the jails in Behar (which is Upper Bengal) the quantity of rice allowed is only 16 ounces, the same amount of pulse (*dal*) is given as in Bengal—viz, 6 ounces, and either 10 or 12 ounces of *ata*, a flour prepared either from wheat or maize, which contains protein. The value of this diet is approximately 105 grammes protein, 650 grammes carbohydrate, and 38 grammes fat. The diet is less bulky than the Bengal diet, but there is too much carbohydrate to permit of the best use being made of the protein element. The recommendations made are: for Bengal jails a diet of rice (Burma or country) 18 ounces, pulse 4 ounces, wheat ata 4 ounces (or fish 4 ounces in its stead twice a week), and vegetables 6 ounces; for Behar jails: rice 12 ounces, *ata* either 10 ounces (from wheat) or 12 ounces (from maize), pulse 5 ounces, vegetables 6 ounces, and on two days a week 5 ounces of fish or goat's flesh in place of 2 ounces *ata* and 1 ounce *dal*. The general effect would be to decrease the quantity of rice all over Bengal by 6 ounces daily, which would work out to a saving of 75,000 rupees (£5000) per annum. It seems strange to read (p. 44) that "it was found practically impossible to get the prisoners (in the Presidency jail, Calcutta) to consume the full diet (26 ounces) of Burma rice for more than a day or two;" the same was found at Buxar jail (p. 102). There must have been a great accumulation of surplus stores in these institutions. Country rice, on the other hand, is consumed in its full quantity.

The general result of the inquiry is to demonstrate that while in chemical value the Bengal diet contains 93 and the Behar diet 106 grammes protein, the nutritive or physiological values are only 49 and 60 grammes respectively—that is, a little over 50 per cent. only of the protein is absorbed, the cause of this low absorption being the excessive bulkiness of the food. By a succession of careful trials it was found that the optimum quantity of rice was 18 (instead of 26) ounces in Bengal and 12 (instead of 16) ounces in Behar.

In the second part of the volume is a very suggestive discussion of Chittenden's views as to the possibility of existing in health on a diet containing less than half the protein content of diets ordinarily in use in Europe and America. In his previous memoir Captain McCay had shown that this is the case in Bengal, the average native reaching an even lower limit of nitrogenous metabolism than any of Chittenden's subjects; many students and fairly well-to-do persons exist on a metabolism of less than 40 grammes of protein daily. But when it came to judging of the effects of such a dietary on physical development, capacity for labour, and resisting power to disease and infection, it was found that Chittenden's standards were not sufficient. The Bengali diet is contrasted with that of the Behari; the latter (in the jails and in the population generally) is about 2 grammes per head higher in nitrogenous metabolism than the former. "In accordance with this we find in the Behari a much better physical development, greater capabilities for muscular exertion, a distinctly greater degree of vivacity, briskness, and sprightliness of manner." His weight is 120 pounds, compared with the 110 pounds average of the Bengali. This results from the 10 per cent. higher nitrogenous metabolism. It is also pointed out that the low nitrogenous metabolism of the Bengali does not secure him from renal disease, the particular condition that Chittenden considers to be most likely to be avoided by protein economy, for renal disease is much more common among the working population of Bengal than in Europeans. A comparison is also made between the hill tribes to the same effect, and the conclusion is come to that "in those races where an assimilable protein, and particularly an animal protein, forms part of the ordinary diet, muscular development and good fighting qualities seem to be intimately related with the level of nitrogenous metabolism attained."

The present memoir by the professor of physiology at Calcutta is of permanent scientific value, and second to none of its predecessors in interest or importance.

Handbuch der Kinderheilkunde. Edited by Professor Dr. M. PFAUNDLER and Professor Dr. A. SCHLOSSMANN. Second edition. Four volumes, with 69 coloured plates and 515 illustrations. (Fifth volume in preparation.) Leipsic: F. C. W. Vogel. 1910. Vols. I. and II. Price each volume, unbound, M.12.50; bound, M.15. Vol. I., pp. 455; Vol. II., pp. 588.

IT is difficult within the limits of a review to do justice to the many additions and improvements which have been introduced in this new edition of a famous textbook. Much has occurred in the domain of pædiatrics since the first edition appeared in 1906, and it is scarce exaggeration to state that no event of importance remains unchronicled in these pages. That this vast and comparatively expensive handbook should have been translated into two languages—English (reviewed in THE LANCET of Feb. 6th, 1909) and Spanish—and yet require a new edition within four years of its first appearance, adequately testifies to the intrinsic merits of the work and to the position which pædiatrics now holds in the world of medicine. In its completed form this new edition will be enlarged by an additional volume and thus consist of five volumes and not four, as in the original issue. The new volume will be concerned with the surgical and orthopædic aspects of the diseases of children and will be the joint work of Professor

F. Lange of Munich and Dr. H. Spitzy of Gratz. The present review is, however, limited to a consideration of Volumes I. and II. only.

The first volume deals with such general subjects as nutrition and metabolism, diseases peculiar to definite age-periods, and with the general pathogenesis, pathology, treatment, and prevention of diseases in children. In only two of the chapters which deal with these subjects is there any noteworthy change—namely, in the one concerned with mortality and morbidity in childhood, written by Professor Prausnitz of Gratz, and in the one on nutrition after the first year, written by Professor Schlossmann himself in conjunction with Dr. P. Sommerfeld of Berlin. The first of these chapters is enlarged and brought up to date, but even in its present form it hardly does justice to the importance of the subject. The second has been entirely rearranged with the change in authorship. This chapter, though an important one, is not likely to appeal to English readers. In the first and theoretical section the feeding of children is expressed in calorie values, a method which, despite its scientific and abstract interests, has few practical applications in the feeding of the human animal, which has tastes, fancies, and idiosyncrasies of digestion and metabolism, all having a way of upsetting the most carefully laid plans. The second section of this chapter, which is concerned only with practical dietetics, also has its limitations, for German foods and methods and times of feeding hardly harmonise with English ideas.

The second volume shows many more important changes. Moreover, it comprises subjects which are of greater clinical interest and importance. The contents of this volume are: Blood diseases, by Dr. A. Japha of Berlin; constitutional diseases, by various authors; acute infections and chronic infections, both written by a variety of distinguished members of the profession. Barlow's disease, or infantile scurvy, if we mistake not, was included in the first edition in the chapter which was devoted to rickets; in this edition it has conferred on it the dignity of a chapter to itself from the pen of Dr. W. Stoeltzner of Halle. The chapter on rickets has itself been greatly enlarged by Professor W. v. Starck of Kiel, and now provides the reader with a more comprehensive account of the etiology and pathogenesis of the disease. The latter elaborates the theory at which he only hinted in the first edition, that the disease is primarily an osseous and muscular dystrophy, and dependent on the factors of domestication and confinement. In this connexion he makes honourable mention of Findlay's experimental work on puppies. Young animals kept in confinement, and especially under conditions of overfeeding, do not give full play to their natural instincts for muscular exercise. The inaction of the muscles deprives the growing bones of their healthy and natural stimulation. Professor Starck draws attention to the influence of internal secretions such as those by the adrenal organs, and refers to the antagonistic action between their secretion and that of the pancreas.

In a new and very excellent chapter Professor Pfaundler discusses the part played by diathesis in disease, and he reviews the claims of such conditions as neuro-arthritism, lymphatic disease, and the exudative diathesis to be regarded as independent entities, or as merely accidental syndromes of symptoms. He gives full prominence to Czerny's views on the exudative diathesis and his treatment by a restricted diet and unstimulating psychological environment. He also refers at length to the views of Buchard and his school with reference to the part played by a sluggish metabolism in the determination of such dyscrasias as gout, arthritis, and fatty disease (Fettsucht). The prominence given to the views of this French school is in marked contrast to the manner in which they have been heretofore ignored in Germany.

Duke's "fourth disease," which, it will be remembered, was described in a separate chapter in the first edition, receives fuller notice in the present volume, and additional evidence is adduced in support of its claims to be regarded as an independent infectious exanthem. Following on this chapter is another from the pen of Professor Pfaundler on "erythema infectiosum," an infectious exanthem 300 cases of which have been recorded in German literature. This disease has been described under various synonyms; for instance, Plachte originally called it megalerythema epidemicum, while Pospischill gave it the name of erythema simplex variabile; by others it has been called erythema simplex marginatum, erythema infantum febrile, and "the fifth disease." Professor Pfaundler declares for its independent existence as a disease *sui generis*. He describes the symptoms and course of the disease with detailed accuracy. The importance of being able to diagnose this exanthem from scarlet fever, or indeed from measles, lies in the fact that its comparatively harmless character does not necessitate prolonged isolation. The troubles of the practitioner in making a differential diagnosis between scarlet fever, German measles, the fourth and the fifth disease, would be greatly mitigated if it could be shown that they are due to infection by polymorphic varieties of one and the same microbic agent presenting different degrees, or indeed kinds, of virulence. The fact that these diseases are not mutually protective does not entirely dispose of this possibility.

The joint editors of these volumes are to be congratulated on the completion of a task of great magnitude. Not one of the least of their difficulties must have been to eliminate a conflict of opinion between the numerous and distinguished contributors who have taken part in this literary symposium. We notice in these two volumes greater uniformity and less reiteration than in the former edition; such a result implies most careful and painstaking editorship and a broad-minded appreciation of the criticism of reviewers.

Medical Electricity and Roentgen Rays. By SINCLAIR TOUSEY, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. With 750 illustrations, 16 in colour. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 1116. Price 30*s.* net.

THIS is a voluminous work which will form a valuable, if ponderous, addition to the library of the specialist in medical electricity and radiology. The subjects are from the beginning treated in the most exhaustive manner, and every point is illustrated with suitable diagrams and drawings. The first section deals with the physical problems involved, and runs to nearly 300 pages. Considering that this is a medical work we think that this part might have been very considerably curtailed. The section on electrophysiology is distinctly good and complete. This first portion of the book, consisting of 340 pages, might well form a volume by itself for the more convenient use of those who seek a useful laboratory handbook. In the chapter on electro-pathology the author describes the effects of lightning and high- and low-tension currents on the tissues and organisms as a whole—a subject that becomes of daily increasing importance with the rapidly extending use of electricity for industrial purposes. We note that he makes no reference to the work of Jellinek of Vienna, whose contributions to the study of electric shock are of the first importance. Subsequent sections deal with the subjects of electro-diagnosis, ionic medication, one on general electrotherapeutics being strikingly brief. After a short reference to the effects of the electro-magnet the author passes on to the use of electricity in nervous diseases, but leaves us with the impression of a lack of completeness, and not greatly convinced of the efficacy of the methods advised.

High-frequency currents are treated at some length and

appear to find favour with the author for many conditions. He considers such applications of decided value in cases of pulmonary tuberculosis. On p. 558 is a radiograph of a patient's chest who had been treated by this method among others. He states that after three months the patient had very greatly improved; he has omitted, however, to give a radiograph of the chest before treatment, which would have been valuable for comparison. The patient died about a year later, but the author thinks the case might have been cured had the patient been able to follow up the treatment, a sanguine view which he does not support adequately. When he comes to the treatment of local conditions and skin lesions by high-frequency currents, the author is on surer ground, and records and illustrates some definitely valuable results, though we do not quite see the reason for illustrating a typical case of alopecia areata that is under treatment at the time of writing, and apparently unchanged. He has had excellent results in pruritus, psoriasis, and chronic ulcers.

A short chapter is given on phototherapy, and then follows the section on the X rays which takes up the rest of the volume except for a few pages at the end which are devoted to the consideration of radium. This X ray section has been very carefully prepared, and we notice a novelty in the form of a cellular diaphragm with which the author claims he can get better definition in his radiographs. It has the effect of intercepting the stray rays to an even greater extent than the ordinary tubular diaphragm. The methods advised in radiography call for no special mention, except that the technique employed in any part of the body is fully explained and illustrated. A short chapter is devoted to X ray treatment, which also calls for no special mention. We note that the author does not claim any higher value for the X ray treatment of malignant disease than it deserves.

The book as a whole is a very valuable contribution to the literature of the subjects treated, but we think it might have been condensed in many places with advantage. The work could have been made less unwieldy by issue in two separate volumes. The printing and illustrations are of a high order and leave nothing to be desired.

Uric Acid in the Clinic. A Clinical Appendix to "Uric Acid as a Factor in the Causation of Disease." By ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P. Lond., Senior Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women; late Casualty Physician to St. Bartholomew's Hospital; assisted by KENNETH G. HAIG, L.R.C.P. Lond., M.R.C.S. Eng. London: J. and A. Churchill. 1910. Pp. 306. Price 5*s.* net.

IN this book Dr. Haig gives descriptions of cases illustrating his views regarding the pathogenic effects of uric acid. It is to be regarded as a clinical appendix to the well-known book in which he has enunciated his opinions; at the same time he has further developed them in the commentaries he gives upon the cases described. He maintains that the diseases or conditions caused by uric acid fall into two groups, the first being the collæmic group, in which he believes that the blood is thickened and its circulation hindered by floating particles of colloid uric acid; and the second the precipitation or retention group in which local retention of uric acid leads to irritation or pain. The collæmic group is subdivided into conditions due to simple collæmia, such as headache, epilepsy, neurasthenia, mental depression, asthma, insomnia, and various other conditions and groups of symptoms. The second subdivision is described as collæmia complicated by an organic factor, and comprises dyspepsia, chorea, Bright's disease, glycosuria, diabetes, high blood pressure, Graves's disease, Raynaud's disease, &c. In the retention group the ordinary gouty conditions are included, as well as arthritis, endocarditis, catarrhs, and cutaneous manifestations. Dr. Haig insists that these various conditions are not sharply marked off from one another and that they are not diseases, but are in all varieties and combinations the results of food poisoning. He discusses the effects of what he describes as a "uric-acid free" diet on these conditions. He divides drugs into solvents and precipitants, and climates are similarly classified. The data given in this book are for the most part simply illustrative cases, and for critical purposes must be considered in connexion with the original work.

LIBRARY TABLE.

The Expectation of Life of the Consumptive after Sanatorium Treatment. By NOEL DEAN BARDSWELL, M.D. Edin., M.R.C.P. Lond., F.R.S. Edin., Medical Superintendent, King Edward VII. Sanatorium. London, Edinburgh, and Glasgow: Henry Frowde and Hodder and Stoughton. 1910. Pp. 130. Price 3*s.* 6*d.* net.—Few tasks are more difficult than that of appraising the value of any method of treatment in a chronic disease of variable type such as pulmonary tuberculosis. A careful study of the after-histories of cases treated at sanatoriums is calculated to afford useful information in regard to the results of that method of treatment. Dr. Bardswell gives a careful statistical study of 241 patients who were under his care in sanatoriums during the years 1899 to 1905. He classifies his cases according to their condition on admission into three groups—viz., incipient, moderately advanced, and far advanced. He gives the results at the time the patients left the sanatoriums and also in 1909. Of the 241 patients, as many as 101, or 45 per cent., were dead in 1909, while 99, or 41 per cent., were classified as "well," and 15, or 6·2 per cent., as "alive"—i.e., "the patient has to make the care of his health his chief consideration in life, possibly to the exclusion of everything else." When the cases are studied in their respective classes the results are less gloomy, for of the 62 incipient cases, 46, or 74 per cent., were classified as well; 1, or 1·6 per cent., as alive; and 11, or 17 6 per cent., as dead, 4 being lost sight of. Among the moderately advanced cases 36·8 per cent. had died, and among the advanced cases 88 per cent. Dr. Bardswell examines his statistics by various methods and gives an interesting commentary upon the results obtained. His conclusions are temperate and practical and he makes no exaggerated claims as to the value of sanatorium methods. His little book is a useful contribution to a subject which is now widely discussed.

Nursing in Diseases of the Eye, Ear, Nose, and Throat. By the Committee on Nurses of the Manhattan Eye, Ear, and Throat Hospital. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 281. Price 6*s.* 6*d.* net.—This is a good little book upon the nursing of sufferers from eye, ear, nose, and throat diseases. In detailing the general duties of sick-nursing, as well as those called for in special diseases, its range is large, nevertheless it avoids superficiality or tiresome minuteness, and is full of invaluable hints clearly and plainly set down. In the treatment of emergencies there is little or nothing omitted that is likely to prove of use to the attendant, and we would refer to the instructions given for the stilling of epistaxis as particularly serviceable. In the after-treatment of tracheotomy the steam tent is recommended as if it were indispensable. Doubtless climatic conditions render it advisable in many quarters of the globe, but we believe that in London experience has shown that tracheotomy cases do perfectly well, as a rule, when exposed to the ordinary ward atmosphere. We should have been glad of fuller details on the important matter of the procedure and after-treatment of the major operations on the nose and ear. As a rule, purely medical points are wisely omitted, but one among those included—namely, the statement that nasal septal

resection should not be undertaken under the age of 14 years—is inaccurate. Apart from these slight criticisms, we confidently recommend the book as a handy guide in the nursing of the special diseases in question, and much of its contents is worthy of the attention not only of nurses but also of surgeons.

The Law Relating to Pauper Lunatics. By SYDNEY DAVEY, B.A., LL.B., of the Middle Temple, Barrister at Law. Second edition. London: The Poor-law Publications Company. 1910. Pp. 283. Price 6*s.* net.—A law-book naturally has to be kept abreast of legislative change and of the development of the law by judicial decisions, so that a second edition of a convenient manual dealing with the law upon a particular subject may be called for after seven years, even though no new statutes of any importance affect its subject-matter. At all events Mr. Davey has no great legal novelty to record, and the recently decided cases which he now incorporates deal with such questions as the reimbursement of the expenses of maintenance and with other topics of interest to guardians responsible as such for the finances of their union rather than to the officers to whom is entrusted the medical care of the pauper lunatic. Medical officers of unions will, however, find their duties and obligations succinctly stated by the author under appropriate headings, the Lunacy Act of 1890 being the principal source from which these are derived. An appendix to the text contains all necessary forms, and the table of contents and index are such as to render readily obtainable any information that is included and that may be sought for.

The Death-Dealing Insects and Their Story. By C. CONYERS MORRELL. Manchester: H. A. W. Offices. 1910. Illustrated. Pp. 79. Price 1*s.*—This little work, written by a medical man who has travelled much in tropical countries, is intended mainly for the purpose of instructing and educating the laity, particularly those who are about to take up residence in a warm climate. Its object is to explain as clearly and as forcibly as possible, in language free from medical and scientific technicalities, the mode in which certain common but serious tropical diseases are conveyed to man through the instrumentality of insects, and the means by which such transmission may be prevented. A considerable portion of the book is naturally devoted to mosquitoes, the transmitters of malaria, yellow fever, and filariasis, and a full description is given of the malarial cycle. A chapter is devoted to sleeping sickness and the tsetse flies, and another to plague and the rat flea. Finally, a chapter is added on ticks and disease, though, as the author says, the tick is not, strictly speaking, an insect. We strongly recommend the work to those about to reside in the tropics. The author's style is clear and interesting, and his statements are easy of comprehension by non-medical readers. We may, however, be permitted to point out that the description of the measures in connexion with the prevention of plague needs some modification. For example, on p. 72 it is stated that "in cases where a ship is infected she is placed in quarantine and no one is allowed to land until the authorities are satisfied that the vessel is free from infection." In most civilised countries quarantine is now abolished and a more sensible and humane policy is carried out, under which immediately upon the ship's arrival the plague patient is landed for isolation and treatment on shore, the vessel being only detained until disinfection can be carried out, while passengers, under certain safeguards, are free to proceed without delay to their destinations.

JOURNALS.

Paludism: Being the Transactions of the Committee for the Study of Malaria in India. Edited by Major S. P. JAMES, I.M.S. Simla: Government Central Branch Press. 1910.—This new journal is one of the outcomes of the conference convened by the Government of India and held at Simla in October, 1909. At that meeting it was decided to establish an organisation which should deal specially with the difficult problem of malaria in India, including investigation of the epidemiology and endemiology of the disease. In connexion with this organisation a central scientific committee was appointed comprising the following officers—viz.: Lieutenant-Colonel J. T. W. Leslie, C.I.E., I.M.S., the Sanitary Commissioner; Lieutenant-Colonel D. Semple, R.A.M.C., director of the Central Research Institute, Kasauli; Major S. P. James, statistical officer to the Government of India in the Medical and Sanitary Departments; and Captain S. R. Christophers, I.M.S., assistant to the director of the Central Research Institute. It was also resolved to establish a Central Malaria Bureau at Kasauli, and to issue a journal under the title of "Paludism," of which Major James was to act as editor. The first number of this journal is now before us, comprising over 50 pages of printed matter. In an "editorial record" Major James sets out the main circumstances leading up to the appearance of the new periodical, the future numbers of which, it is expected, will be issued every three or four months. Following this editorial is an article on Investigations Relating to Quinine, in which a number of questions are formulated for the guidance of inquirers. These questions are subdivided into those relating to the treatment of primary cases of malaria, the after-treatment (treatment to prevent relapses), the treatment of apparently healthy malaria carriers, and the prevention of new infections. A memorandum is submitted containing questions to which the central committee desire answers respecting endemic and epidemic malaria. Another contribution is a short syllabus of the work done at the malaria classes for medical officers held at Amritsar during March and April of the present year. Captain Christophers contributes a valuable article entitled "Suggestions on the Use of Available Statistics for Studying Malaria in India." These suggestions cannot fail to be of great service to workers on the subject. The editor gives some "Notes on Mosquitoes," including a description, with illustrations, of a new anopheline, *Christophersia halli*; he also furnishes some observations on the generic position of the anophelines *stephensi*, *willmori*, and *rossi*, and also on the prothoracic lobes or patagia of anophelines. The number concludes with a digest of recent literature on malaria in India and in other countries. This new periodical should have success, for there can be little doubt of its proving of great use not only to the workers in India for whom it is primarily intended, but also to investigators in other parts of the world where malaria prevails. It seems to be the intention of the central scientific committee to make the Central Malaria Bureau at Kasauli and its quarterly journal *Paludism* achieve for malaria in India what the Sleeping Sickness Bureau in London and its monthly bulletin have done in advancing the study of trypanosomiasis.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Oct. 13th, Mr. BUTLIN, the President, being in the chair.

The SECRETARY reported the death, on Sept. 11th, of Mr. John Langton, past Vice-President, and past member of the Council and of the Court of Examiners. It was resolved—

That the Council hereby express their deep regret at the death of Mr. John Langton, past Vice-President of the College, and their sincere sympathy with his widow and family in the loss which they have sustained.

That the Council do also record their appreciation of the services rendered to the College by Mr. Langton as a Vice-President and member of the Council and of the Court of Examiners, and their respect for

the devotion which he displayed in the work which those offices imposed upon him.

The best thanks of the Council were given to the President for the gift of his collection of sketches of early cancer of the tongue and conditions which may be mistaken for early cancer. The best thanks of the Council were given to Professor F. W. Bird of Melbourne for the gift of his collection of stereoscopic radiographs of anatomical and pathological subjects, and also to Dr. C. G. Seligmann for presenting a number of New Guinea skulls.

Mr. RICKMAN J. GODLEE, on behalf of the Committee on the Annual Report of the Council, submitted a draft copy of the report to be presented to the Fellows and Members at the annual meeting on Thursday, Nov. 17th. The report was approved and adopted.

Mr. J. F. Colyer was elected a member of the Board of Examiners in Dental Surgery, and Mr. Godlee was reappointed a member of the Committee of Management.

It was resolved to recognise the Great Northern Central Hospital as a place of instruction for the Final Fellowship.

Mr. Gerald Gibbon, till lately a student of Epsom College and now of St. Bartholomew's Hospital, was nominated the Eighteenth Jenks Scholar.

A vote of thanks was given to Dr. Amand Routh for representing the College at the recent International Congress on Gynæcology at St. Petersburg.

THE NEW CALENDAR.

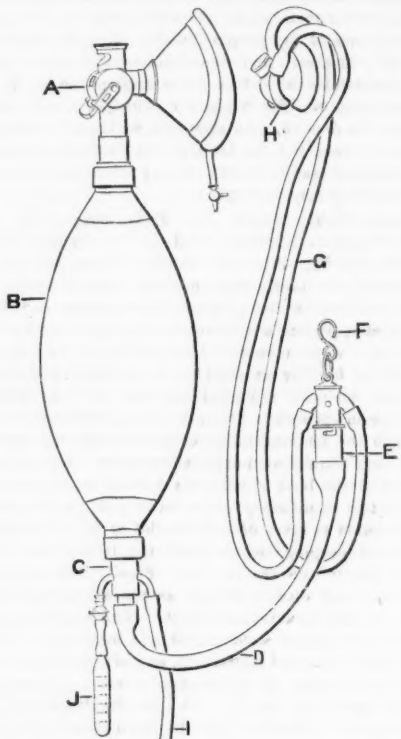
The Calendar of the Royal College of Surgeons of England for 1910–11 has been published by the Council of the College. There is now included in the Calendar a list of the trustees of the odontological collection which is housed at the College, whilst lists of the Masters of the Company of Surgeons, of the members of the Court of Assistants, and of the Court of Examiners from 1745 to 1800 have also been added. Considerable alteration in the text of the regulations for the examinations for the various College diplomas has been necessitated by the admission of women to the examinations. The Fellows of the College now number 1487, an increase of 30 over that of last year. There are 1449 Fellows admitted by examination, 29 elected as Members of 20 years' standing, eight "Fellows by election," and only one Fellow now remains "elected ad eundem." The number of Members on the roll is 17,030, an increase of 73, whilst there are 2263 Licentiates in Dental Surgery and 674 Diplomates in Public Health. The number of Licentiates in Midwifery is getting smaller each year and only 323 now remain. Mr. G. Carrick Steet, aged 92 years, the oldest Fellow of the College, is, and has been for a considerable time, a resident of London. The oldest Member, Mr. Edgar Jones, who is in his 101st year, resides in Essex.

The Secretary's report of the proceedings of the College Council during the past year occupies many pages of the Calendar and contains much interesting matter concerning the proposed combination with the University of London, the jubilee of the College Licence in Dental Surgery, and the administration of anæsthetics. With regard to the Museum, the superintendence of which is entrusted by the Council to a committee of its members, a summary of the progress made in the preservation, arrangement, and augmentation of the collection is contained in the Calendar. The institution of a historical collection has been carried out, and it contains preparations from the general collection which illustrate the diseases of eminent and famous personages or illustrate past medical and surgical methods and beliefs. The new card catalogue has now been instituted and four cabinets have been specially constructed for the same and placed in the entrance hall of the Museum. The large and important pathological department and also the gynæcological section are now being re-catalogued, and the new illustrated guide to the Museum has already been sold to a large number of visitors. The library of the College has had many valuable donations made to it, including 18 works published by the professors and distinguished alumni of the University of Geneva on the occasion of its 350th anniversary; a reproduction of the "Tabulæ Anatomicæ Sex" of Vesalius, privately printed for Sir William Stirling Maxwell in 1874 and now presented by his son, Sir John Stirling Maxwell; and the manuscripts of the late Sir James Paget from his son, Mr. Stephen Paget. Sir John Tweedy has also made many valuable presentations to the library numbering some 21 volumes, and has also been the means of acquiring for the College three very rare early printed books. The number of readers who used the library during the year was 10,413, a considerable increase on the number for the previous year. Particulars of the various prizes offered for competition by the College are given in the Calendar in full, together with a list of the several recipients since they were instituted.

New Inventions.

A COMBINED ORAL AND NASAL NITROUS-OXIDE INHALER.

I HAVE designed this inhaler and find it of great use in nervous patients and in those with nasal obstruction who cannot breathe through the ordinary nasal inhalers; also in hairy subjects, those with short upper lips, and the edentulous, on whom it is difficult to fit other nasal apparatus accurately. It is quite simple to use and gives excellent results where prolonged gas anæsthesia is required. It can be used for ether and ethyl chloride with or without gas. It has been manufactured for me by Messrs. C. Barth and Co.



A, 3-way stop-cock and face-piece. B, Gas-bag for N_2O. C, Valved outlet tube supplying gas to nose-piece tubes. D, Flexible tube connecting portions C and E. E, Metal terminal with side outlets connecting with nasal supply tubes. F, Hook for suspending inhaler at side of chair. G, Supply tubes to nose-piece. H, Metal nose-piece with expiratory valve. I, Supply tube from cylinders. J, Graduated glass tube for use with ethyl chloride.

T. GRAHAM SCOTT, M.R.C.S. Eng., L.R.C.P. Lond.,
Senior Anæsthetist, Great Ormond-street Children's Hospital; Senior House Anæsthetist, Royal Dental Hospital, London.

THE LANCET.

LONDON: SATURDAY, OCTOBER 22, 1910.

The Catholic Spirit in Scientific Inquiry.

IT is a striking tribute to the profound genius of WILLIAM HARVEY that in the long series of distinguished physicians who have been called on to deliver the oration commemorative of his fame, so many should have dwelt on the remarkable manner in which the most recent pre-occupations of modern biology are often foreshadowed in the writings of the great English physiologist of the seventeenth century. The Harveian orator for this year, Dr. H. B. DONKIN, whose address, delivered before the Royal College of Physicians of London on Oct. 18th, is published in full in our present issue, has followed this precedent, while selecting as the material of his excellent oration a subject on which he is particularly fitted to speak. Dr. DONKIN'S official work of late years has been much concerned with such matters as crime, inebriety, and mental defect, and this fact led him to select for the matter of his discourse the evolution and inheritance of mental characters with special reference to the influence of heredity in the causation of anti-social conduct; and he has had an easy task in showing that such a choice of subject, so far from being alien to a Harveian oration, is peculiarly fitting to the commemoration of the great master who thought nothing in nature more marvellous than that law by which, to quote his own words, "the son is born like his parents, and virtues which ennoble and vices which degrade a race are sometimes passed on to descendants through a long series of years." The lucidity and conciseness with which Dr. DONKIN has treated this vast question will excuse us from all attempt to condense his remarks; but the salient lesson of his discourse may perhaps be dwelt upon briefly with advantage to our readers.

Dr. DONKIN'S address is essentially a plea for a more catholic spirit with regard to scientific methods of inquiry. As he rightly insists, we are nowadays in some danger of adopting a too exclusive attitude in this matter, and we are apt to pin our faith to some one particular form of investigation instead of following that comprehensive method which takes into account all authentic and relevant facts, by whatever way the knowledge of them may have been acquired. And no better proof of the soundness of this view could be furnished than the recent history of one of the subjects to which Dr. DONKIN refers, and on which, indeed, he speaks with exceptional authority. We allude to the study which it is now customary to designate by the term "criminology"—a hybrid term of barbarous sound which Dr. DONKIN reprobates by the gentle censure of inverted commas. The study of crime has necessarily attracted attention from the first institution of society, and theories of crime and conceptions of the nature and temperament of criminals are implicit in many of those primitive generalisations which have come down to us as proverbs. And from those early days down to the time of learned Congresses of Criminal Anthropology the question of the etiology of crime has been discussed with a great expenditure of zeal and industry and with extremely little practical result. And if we ask the reason of this unsatisfactory issue we shall find it in that tendency to narrow and one-sided inquiry which Dr. DONKIN so justly criticises. Of the earlier theories regarding the criminal individuality it is needless to speak; they made no pretence to a scientific origin. More instructive from our present point of view are those doctrines of later date which are associated in the popular mind with the conception of criminology, and which, as they are supposed to be the outcome of inductive investigation, are presented by their adherents as in a special degree scientific. These doctrines of hereditary criminality, which Dr. DONKIN stigmatises as "a mass of imperfect and unclassified observations linked together by untested hypotheses," are, surely, an excellent example of the dangers against which he seeks to warn us in biological and sociological inquiries, and the evils which they illustrate on a somewhat magnified scale are met with also in a less marked, and therefore more insidious, form in other investigations of a similar order. When we examine these doctrines more closely we are immediately struck by the fact that, despite their avowedly inductive origin, the hypotheses of a congenital criminal organisation are based on an *à priori* assumption of a kind with which some biologists have made us familiar in recent years. That assumption is to the effect that modes of social conduct can be reduced to the expression of simple inborn traits; the "criminal" is a law-breaker by virtue of his innate anti-social disposition, the "inebriate" drinks to excess because of an innate susceptibility to the charm of alcohol, and so on. This method of explaining criminal conduct—a method which we can hardly call original, for it was anticipated by MOLIÈRE'S doctor when he accounted for the action of opium by ascribing to it a *virtus dormitiva*—would not, perhaps, have gained acceptance had it been so crudely stated, but when it was presented with the support of an imposing array of anthropometric observations its inherent fallacies were disguised, and it took on an imposing scientific air because, as Dr. DONKIN points out, we are prone to attach exaggerated importance to the data ascertained by experiment or by the application of special methods of research, while we undervalue those facts which we can discover by the exercise of our intelligence and our unaided senses. We have, in fact, so thoroughly taken to heart HARVEY'S exhortation "to search out and study the secrets of nature by way of experiment" that we are in some danger of exalting this method into a fetich. Heaven forbid that we should belittle whole and excellent schools of hard and acute work; but we must try gallantly to relegate that work to its proper place.

Another lesson, and a lesson which Dr. DONKIN has been careful to inculcate throughout his discourse, is that we are perhaps too ready at the present time to ignore the influence

of the environment in determining the direction of individual development. This tendency, which the doctrine of hereditary criminality displays in an extreme form, is implicit in a great deal of that biological discussion of social problems which enjoys so wide a vogue nowadays. The biometrician with his mass statistics and the Mendelian with his pedigrees, however much they may be at variance on other matters, appear to be agreed not infrequently in assuming that the social value of the adult individual can be taken too completely as a measure of his germinal endowment. When we bear in mind how large a part gratuitous assumptions of the same sort played in the theories of LOMBROSO the analogy may perhaps inspire us with a distrust of such generalisations, doubly dangerous because they are offered to us as motives for immediate actions and abstentions which may have far-reaching effects on the well-being of the race. Meanwhile, we shall do well to remember that the study of the criminal by the methods which are now at length beginning to be adopted—that is to say, by the psychological examination of individual criminals—by no means confirms any view that the rôle of the environment is negligible; on the contrary, it tends more and more to show that, to quote the apt language of MANOUVRIER, in most instances the delinquent differs from the law-abiding citizen mainly in his acts and little in his aptitudes, and that criminal conduct is far more a result of unfavourable environment than of abnormal organisation. It does not, of course, follow that this is equally true of the relation of organisation and environment in other bio-social phenomena; but it is certain that we cannot accept the contrary view until we have confirmed it by applying to the examination of these phenomena the same method of individual study which, as has been so rightly urged by Mr. J. LIONEL TAYLER, is the essential foundation of sociological inquiry.

Anaphylaxis.

THE phenomenon of anaphylaxis or hypersensibility to serum or protein injections is one with important practical bearings in connexion with the treatment of disease in man by the injection of alien serums. The term "anaphylaxis" was originally introduced by RICHET as an antithesis to prophylaxis, and is in some sense a misnomer, since anaphylaxis may be of value to the organism as a protection. VON PIRQUET introduced another term—viz., "allergie"—to express the altered power of an organism to react to a foreign protein. The ordinary diagnostic tuberculin and mallein reactions are instances of anaphylaxis. No reaction is produced in normal persons by these substances in moderate doses, whereas in those suffering from tuberculosis or glanders a reaction is produced owing to the increased susceptibility. Experimental anaphylaxis can be readily studied in the guinea-pig owing to its sensitiveness to substances such as horse serum, white of egg, and milk. The so-called "serum disease" which sometimes occurs in man after the injection of horse serum was studied by VON PIRQUET and SCHICK, who suggested that the immunity given by vaccinia and other infections may be due to a power of rapid or immediate reaction acquired by the organism, and that the property of anaphylaxis, so far from being a danger, may sometimes be a factor in protection.

An interesting review of the literature of this subject was published in the *Archives of Internal Medicine* of June 15th, 1909, by Dr. JOHN F. ANDERSON and Dr. M. J. ROSENAU, who have in collaboration devoted much attention to the investigation of anaphylactic phenomena. We have recently received an interesting report of further researches upon this subject by Dr. ANDERSON and Dr. W. H. FROST.[1] They point out that DOERR and RUSS have introduced a method enabling a quantitative study of anaphylaxis to be carried out, and that they have demonstrated a definite quantitative relation between antigen and sensitive antibody. Dr. ANDERSON and Dr. FROST give details of their own experiments and arrive at some interesting deductions from them in regard to the nature of hypersusceptibility, anti-anaphylaxis, and immunity. They used horse serum and white of egg as antigens, and they studied especially the anaphylactic antibody, for which they have introduced the new term "allergin." They believe that hypersusceptibility to a foreign protein consists in an increase in the normal power of assimilating this protein, especially an increase in the rapidity of the reaction. This is due to the formation of a specific antibody demonstrable in the serum of sensitive guinea-pigs and in somatic tissues such as smooth muscle. It is also suggested that the action of this antibody upon its antigen is quantitative and is probably primarily proteolytic. Anaphylactic shock is in their opinion a disturbance of metabolic equilibrium rather than the effect of a specific toxic action. Anti-anaphylaxis is the condition which immediately succeeds anaphylactic shock in an anaphylactic animal, in which it is in a condition of immunity to anaphylactic shock from a further injection of the same antigen. Anti-anaphylaxis may, however, be induced by injection of antigen in repeated small doses. It is explained as due to saturation of the anaphylactic antibody with antigen. Anti-anaphylaxis is a temporary condition, which passes gradually into a condition of relative insusceptibility, which is distinguished as "immunity" proper. Anaphylaxis may be transferred passively to a normal guinea-pig by injection of serum from a sensitised animal. This passive transfer, as also the hereditary transmission of anaphylaxis, consists in a transfer of the anaphylactic antibody according to Dr. ANDERSON and Dr. FROST. They conceive anaphylaxis as a step toward immunity which is an increased capacity for safely and rapidly eliminating the specific antigen protein.

An interesting paper from Professor G. BILLARD, of Clermont-Ferrand, is published this week, in which he suggests that hay fever, asthma, nettle-rash, and the idiosyncrasy possessed by some people towards certain articles of diet are all manifestations of anaphylaxis. He gives details of a case in which he was able to trace the successive steps in the progress of the patient's condition from nasal catarrh to a bad attack of asthma. He believes also that some asthmatics are hereditarily anaphylactic. In regard to nettle-rash, he quotes a case of a young man who always developed nettle-rash after

[1] Studies upon Anaphylaxis. Bulletin No. 64, Hygienic Laboratory, Public Health and Marine Hospital Service of the United States. Washington, 1910.

eating pork. His serum injected in a guinea-pig induced a clear anaphylaxis towards pig's serum. The attacks of asthma induced by articles of diet Professor BILLARD explains in a similar manner to those induced by pollen, and to the urticaria induced by shellfish or similar articles of diet—viz., as manifestations of anaphylaxis. He sums up his views in the following sentence: "I am able to conclude that neuro-arthritics, and especially asthmatics and those predisposed to hay fever, are persons victims to anaphylaxia, either hereditary or acquired." His observations, though suggestive, hardly afford convincing proof of the thesis he champions, since the absolute experimental demonstration of the anaphylactic nature of some of the conditions he refers to is, as he admits, at present wanting. It is also noteworthy in this connexion that the majority of observers have failed to induce experimental anaphylaxis through the alimentary canal, the antigen protein apparently having to be given by subcutaneous, intravenous, or hypodermic injection to be successful. Until the possibility of successful production of anaphylaxis through the absorption of the antigen by the alimentary canal has been incontrovertibly established Professor BILLARD'S views must remain unconvincing.

It is difficult at the present time to determine the exact rôle of the phenomenon of anaphylaxis in the general process of immunity. As our knowledge of the reactive process of the body develops it becomes increasingly obvious that immunity is a highly complex process, and that the relative importance of humoral or chemical, and of phagocytic or cellular, reactions is difficult to appraise. The question of anaphylaxis in relation to immunity was discussed at some length by Dr. F. W. ANDREWES in the Croonian lectures, which were published in THE LANCET of June 25th, July 2nd, 9th, and 16th. He demonstrated that the phenomena of anaphylaxis are not entirely humoral, and that the leucocytes are profoundly affected during certain phases of the reaction between antigen and antibody. The initial leucopenia which occurs after the injection of living or dead bacteria or after the injection of antigen in an anaphylactic animal is, he maintains, an anaphylactic phenomenon. It is in effect an immunity reaction, and is, he further suggests, a more delicate test of the reaction between antigen and antibody than the occurrence of the clinical symptoms of anaphylactic shock. The dangerous and sometimes fatal nature of these symptoms seems difficult to interpret on the view that anaphylaxis is an immunity reaction, and therefore useful to the organism, but, as Dr. ANDREWES points out, under natural conditions it is highly improbable that so large doses of alien protein or of bacterial agents will suddenly gain entrance as those given under experimental conditions. His conclusion is worth quoting. "We must not," he says, "deny the right of the anaphylactic animal to be termed immune merely because we can make it ill or kill it by an artificial procedure which has no parallel in ordinary life." There can be little doubt that the property of anaphylaxis is one of great importance to the organism and that its careful study will yield valuable information and probably important practical applications. The literature of the subject is already considerable and its developments will be watched with interest by all who are engaged in the therapeutic applications of immunity reactions.

Bone-setting.

WE venture to deal somewhat plainly with certain utterances of Mr. W. T. STEAD in the *Review of Reviews* for October, and we are sure that he will not resent our plainness, for he has alluded to THE LANCET in epithets so uncomplimentary that he must have been seeking a straight reply. In the last number of the *Review of Reviews*, then, there is an account of the doings of a well-known bone-setter, and to his achievements in what Mr. STEAD terms a "hinterland of surgery," meaning, it would appear, a department of surgery which, formerly practised chiefly by persons described as "bone-setters," was prominently brought before the medical profession in our columns, 40 years ago, by Dr. WHARTON HOOD, who more recently, and shortly before his retirement from practice, published a treatise on the manner in which recent injuries should be dealt with, in order to avoid the occurrence of the conditions which he had previously shown the way to cure. We will not attempt to follow Mr. STEAD through a discussion in which a fertile imagination is drawn upon for an account of the position which we have assumed; but we may point out that the present support of Mr. H. A. BARKER is not more emphatic than that which he accorded, a few years ago, to Count MATTEI and variously coloured "electricities." There is no doubt that Mr. STEAD is very imaginative. We do not suggest that Mr. BARKER belongs to Count MATTEI'S category; and if it be true, as more trustworthy people than Mr. STEAD have said, that he is a skilful manipulator, we can only regret that he has not enjoyed the benefit of a professional education which would have shown him certain pitfalls to be avoided, and would have enabled him to turn his natural gifts to the best account. We do not feel sure whether the description of his achievements in Mr. STEAD'S journal is entirely his own, or whether it has been partially refracted in its passage through the medium of Mr. STEAD'S consciousness, but there is one part of it on which we feel inclined to comment. We are told that Mr. BARKER has "cured" 27,000 cases which, according to the methods of the "recognised practitioner," were incurable; that he has failed, or so it is implied, in 3000 more which he took under treatment; and that he "selected" the 30,000 from among "a much greater number" who were brought to him. He would be compelled to make a careful examination in order to decide that a given case was unsuitable for his methods; and he speaks of requiring from five to twenty manipulations for a single patient, not to mention the time needed "for the production of temporary anæsthesia." It is not too much to assume that every case, taking one with another, would occupy him for an hour. But Mr. BARKER has only been at work, according to Mr. STEAD, for nearly 20 years, so that recently he must have been very busy, almost busier than it is possible to conceive, as a simple sum in arithmetic will show. The neglect of the medical profession cannot have hurt him materially.

Turning to the essential conditions of the problem which the discussion on the merits or demerits of Mr. BARKER has brought forward, they are, in truth, sufficiently simple. What is known as "bone-setting" arose as an industry in certain thinly populated parts of England, largely among the dalesmen of the north, where medical or surgical aid was often difficult to procure, where the sports and labours of herdsmen and shepherds entailed considerable liability to injury; and where domestic medicine, supported by the sensations of the sufferer, prescribed that an injured part should be kept at rest, and not infrequently that it should be comforted by hot fomentations. The hot fomentations promoted a flow of arterial blood to the injured part; the quiescence of the muscles withdrew the force by which this blood would normally have been pushed on into the veins; extensive transudation of blood fluids occurred, and this transudation, as time went on, hardened and contracted into crippling adhesions. The muscles, wasted and weakened by quiescence, were no longer able to perform even their normal functions, were utterly unable to overcome the new resistance opposed to them, and resented by pain any effort to force them into renewed activity. The result was a fixed and useless joint or limb, until the bone-setter, by more or less skilful manipulation, ruptured the adhesions and restored mobility, with the consequence that the muscles, unless hopelessly atrophied, regained in time their normal vigour. The type of the whole matter is furnished by a sprained ankle, which, 50 years ago, was treated by rest and hot fomentations, and was justly regarded as a more serious injury than a broken leg, while to-day, treated by support and movement, it speedily recovers. The conditions tending to produce disability of joints and muscles received, unfortunately, a new lease of life in this country from a misinterpretation of the teachings of the late Mr. HILTON, whose famous prescription of rest for pain, too faithfully followed, has furnished hundreds of cases to the bone-setter. Those who followed Mr. HILTON'S recommendations were apt to forget that rest implies eventual atrophy of muscle, with consequent venous congestion and plastic effusions into the surrounding tissues; and that pain, arising from the fact that a weak muscle is called upon to exert itself, is not only as harmless as the pain of parturition, but is certain to bring about its own cure by the mere continuance of effort in disregard of it. The improved results now obtained in the treatment of fractures, which are largely due to Dr. WHARTON HOOD'S teaching and example, are mainly dependent upon rubbing to prevent stagnation of the venous current, and upon sufficient action of the muscles of the limb to preserve them from undue wasting during the period of reunion. The business of scientific surgery is not so much to become skilful in manipulations which ought not to be necessary as to treat injuries in such a way that prompt recovery may ensue, and that no manipulations will be required. The cases following injury in which the bone-setters achieve success will be found, on inquiry, to resolve themselves into two categories: those in which an injury, such as a rupture of muscular fibres, received during some active game had been originally treated by mere rest at home, under the belief that it would "soon get well," and those in which the natural desire for rest had been encouraged by some practitioner, who, in this respect, had suffered himself to remain somewhat in the rear of the modern developments of surgery. There is, in reality, no "hinterland," unless such a name can be given to a number of cases due to ineffective treatment of recent and comparatively trifling injuries, injuries of a class which has been rendered numerous by the modern devotion of youth to the pursuits of athleticism, and to the often untrained condition of those by whom these pursuits are undertaken.

Whether Mr. BARKER'S practical knowledge of anatomy, which appears, according to Mr. STEAD'S article, to have been gained independently of dissection, from the perusal of two excellent manuals, can be sufficient to furnish safe guidance in his manipulations, is a question highly interesting to his patients, but one which we do not propose to discuss. The point of chief importance to the profession is whether the supposed hinterland has any real existence other than as a residuum left behind by domestic medicine, or possibly, in some cases, by methods of treatment in which rest has been carried to excess, and the sensations of the patient indulged without due reference to the effect of the indulgence upon his permanent welfare. Nothing in Mr. STEAD'S words, convincing as he has tried to make them, leads us to suppose that we have taken up an illiberal attitude in this matter, or that bone-setters, individually or as a class, ought to be regarded as on the same scientific plane as fully qualified medical men. His article, to which he has invited our attention, ends with an appeal "made with the utmost confidence" to leading surgeons and others to constitute a committee of surgeons, whose names would command the respect of the public, to investigate Mr. BARKER'S methods. We think that Mr. STEAD'S utmost confidence may be betrayed, and that he himself has, not for the first time, written about what he does not understand.

Annotations.

"Ne quid nimis."

THE PRICE OF PROGRESS.

IT was a well-known custom amongst primitive peoples to assure the stability of any undertaking by the sacrifice of life. In the earliest times the life was human; in later and more merciful days an animal was substituted, and still later an image was used, or sometimes the shadow of a man was allowed to fall over the foundation trench, and was thereby symbolically buried, but in all these rites the sacrifice was voluntary. The human victim was sometimes willing, sometimes drugged, so as at least to be non-resistant, and the animal was bought with a price. Even now it is no uncommon thing in India to hear that a bridge or other structure will stand because certain lives have been sacrificed during the course of construction, and it is only too certain a fact that any advance in human invention is always accompanied by the payment of a heavy toll in human life. Only by this can the successors of the pioneers get the mastery over the new forces which have been discovered. To go no farther back than 15 years ago, the study of the Roentgen rays has led to the death or mutilation

of more than one investigator, but their sacrifices have not been in vain, for we have now learned much of the powers and the management of the new form of energy. But the most recent discovery, that of flying, is still in the stage of demanding life as a price, and during this year only we believe that 19 lives have been lost, while the motor-car, although now a common-place, has also a grim record behind it. Surely we may ask ourselves whether enough lives have not been sacrificed and whether needless risks are not being run. Wellman and his party have escaped destruction, but Chavez is dead, killed, if we may credit reports, on the practical completion of an undertaking into which he entered with great misgivings; Dickson is seriously injured. To pass to motor-cars, the Vanderbilt Cup race held on Long Island has resulted in four persons being killed, two of them competitors, and in 20 persons being injured. In this instance there was a competition, but an absolutely useless one—namely, a speed competition. Everybody nowadays knows that a motor-car can go at 60, 70, or even 80 or 90 miles an hour, so why demonstrate the fact again? The utility of the motor-car is beyond dispute, that of the aeroplane is still in a debateable stage, but in our opinion the time has arrived when useless competitions or exhibitions should be sternly put a stop to. We do not for one moment suggest that aeroplaning trials should be done away with. Unavoidable accidents may and probably will still occur and human lives may still be sacrificed in the pursuit and for the increase of knowledge, and the price, if necessary, will be willingly paid. But it is time that unnecessary risks should be forbidden. No goal was ever yet attained without the expenditure of toil and pain, the conquest of the air and the perfecting of rapid modes of locomotion may be necessary from a patriotic as well as a commercial point of view, and yet the counsel of an easy-going man of the world who was yet a true patriot is still good for us to remember:—

> Expertus vacuum Daedalus aera
> Pennis non homini datis;
> Perrupit Acheronta Herculeus labor;
> Nil mortalibus arduum est,
> Caelum ipsum petimus stultitia; neque
> Per nostrum patimur scelus
> Iracunda Jovem ponere fulmina.

Horace doubtless had something else in his mind when he wrote the word "scelus," but foolhardiness and unnecessary risks, run in many instances solely for gain, are no bad translation thereof.

HEART DISEASE IN THE HOME ARMY.

IN the *United Service Magazine* of Sept. 14th is an interesting article under the above heading by Dr. W. Hill Climo, lieutenant-colonel Army Medical Staff (retired). He asserts that heart disease in the British army has been for many years a byword and a reproach to the medical and military authorities, for it is associated in the public mind with the soldier's life and with service conditions which are believed to be detrimental to health. Dr. Climo maintains that these are erroneous views, but he believes that the fault does not rest so much with the public as it does elsewhere. He believes that to a certain extent the Army Medical Department is responsible, partly, he says, because for many years departmental opinion has been influenced by the fact that a post-mortem examination is made in the case of every death which occurs in a military hospital, so that every lesion of the heart and of the blood-vessels is recorded, whereas in the case of the civil population there is no means of obtaining like information. He proceeds to advance arguments in support of his belief that military service, instead of being a cause of heart disease, offers the best means for its prevention. In order to arrive at a conclusion statistical considerations naturally have to be carefully studied. On the one hand, the incidence of diseases of the heart and of diseases of the blood-vessels as occurring in soldiers has to be made out, and then the incidence of the same diseases amongst the general population must be ascertained. From the Army Medical Department reports the former information can be obtained, but it is practically impossible to so calculate the latter with any degree of exactitude. But by reference to the Registrar-General's annual returns of deaths the general mortality can be found for any particular year. In this way results can be arrived at that go a long way to substantiate Dr. Climo's contention. He shows (1) that, taking the whole population in England and Wales, there were 3110 more deaths from diseases of the heart and from diseases of the blood-vessels in 1907 than there were in 1906, while in 1906 the deaths from these diseases exceeded those in 1905 by 1968; (2) that the percentage of deaths in 1907 was 6·60 greater than in 1905; (3) that the combined death-rate of diseases of the heart and of diseases of the blood-vessels is the greatest of any group of diseases, and is at the present time only a little less than one-sixth of the total mortality from all causes; (4) that the death-rate in the army from these diseases is decreasing with a corresponding number of invalids, whilst the rejections on enlistment, with fluctuations, show a progressive increase (this statement is founded on statistical evidence); and finally, (5) that the services of France and Germany, the two countries which have adopted universal military service for the longest period, have of all armies the lowest admission- and death-rates for cardiac affections. Dr. Climo deals mainly with statistics, but there are some clinical points which have a bearing on heart disease in the army; for instance, diseases of the blood-vessels, aneurysms particularly, are of syphilitic origin, and it would be interesting to obtain observations as to the incidence of aneurysm in relation to that of syphilis amongst soldiers. The question discussed in the article under consideration is an important one, and Dr. Climo's suggestion that an "inquiry should be made by the Army Medical Department in association with the General Staff of the Army" is one which should receive attention.

CAN FISH CONVEY THE BACILLUS OF CHOLERA?

To answer this question, Professor Gosio of Rome, the State bacteriologist, has begun a series of observations on the Apulian and Neapolitan littoral, a torpedo-boat having been placed at his service by the Admiralty, with all the resources of his office, in *personnel* and equipment, on board. That typhoid fever can be conveyed by fish, particularly by the *frutta di mare* (shell-fish) so largely consumed on the Italian sea-board, is a well-authenticated fact. Sewage still finds its way into those waters, and the oyster dredged off Santa Lucia is notorious as a cause of gastro-enteritis. So common, in fact, is intestinal disturbance, in the late summer and early autumn, among the Neapolitans with whom at that season "la zuppa marinara" and fish diet generally are in special favour, that, when the cholera appeared three weeks ago, its presence was masked by the symptoms all too familiar among the consumers of such fare—the initial vomiting and abdominal malaise, characteristic of the Asiatic disease, being vaguely set down to the "sturbi intestinali" endemic before and after the dog-days. Imported from the Russian shores of the Black Sea, the cholera numbered many victims at the Apulian ports, and their dejections, whether on shipboard or on the littoral, may have passed into the digestive apparatus of the fish—the crustacea, in particular—with the possible multiplication of the "vibrioni colerici specifici." Now, says Professor Gosio,

"the problem before us is to ascertain whether, having effected their way into the intestine of the fish, the said 'vibrioni' multiply in large numbers? Again, in what other fish, besides the molluscs, do they seem to find a lodgment? And, further, do they take most kindly to migratory fish, when they would constitute a serious danger by transporting the infection to a distance?" Professor Gosio adds that, in the process of cooking, and in frying rather than in boiling, the cholera bacillus may be rendered innocuous; but no one familiar with the perfunctory cuisine of the Neapolitan poor will place much reliance on this safeguard. Besides, the oyster, the most suspected of the "frutta di mare," is almost invariably eaten raw. Professor Gosio's researches come not an hour too soon and their results are awaited with interest, not only by the pathologist, but by the public, the northern section of it in particular, which seeks health and warmth and distraction in the sun-traps of Italia Meridionale.

ENGLISH URBAN MORTALITY IN THE PAST SUMMER.

UNTIL the results of next year's census are known medical officers of health, and all interested in public health, are practically bound to accept the vital statistics issued by the Registrar-General as the best available test of local sanitary condition, although these statistics are hypothetically calculated on estimates of population based on the rates of increase or decrease that prevailed during the ten years ending in 1901. There are many undoubtedly good grounds for the opinion that at the present time the populations of our large towns (residing within their arbitrary boundaries), taken generally, and of London in particular, are by the official method of estimation considerably over-estimated, resulting in the under statement of their current annual rates of mortality and in the exaggeration of the persistent decline of their birth-rates. Some of the medical officers of health of our largest towns express in their reports a conviction that the official estimates considerably over-state the true populations of their sanitary districts, but, failing any more trustworthy method of estimate (in the absence of a quinquennial census), they naturally accept the official estimates, which imply a too favourable test of the sanitary condition of the over-estimated towns. As it is, however, quite possible that by the official method the present population of some of our large towns may be under-estimated, it may be assumed that the value of official statistics relating to the 77 largest English towns, in the aggregate, is not seriously affected by the want of more accurate information as to their present population. The official estimate of the population of these 77 towns, in the middle of this year, is very close upon 17 millions. Accepting this estimate, the 13 weekly returns issued by the Registrar-General during the three summer months of July, August, and September last show that the annual rate of mortality in the 77 towns during that period was equal to 11·8 per 1000, against 13·4 during the corresponding periods of the four years 1906–09 in the 76 towns to which the official reports related in those years. These figures imply that the death-rate in our largest towns during the past summer was no less than 12 per cent. below the mean rate in the four preceding summer quarters. It is satisfactory to feel assured that, after full allowance for the more than probable over-estimate of the population of these towns, the official mortality statistics indicate a real and substantial improvement in the health condition of our largest urban sanitary districts. Using the same official estimate of population, it appears that the mean annual birth-rate in the 77 towns during the three recent summer months was equal to 24·7 per 1000, against 26·5, 26·9, and 25·3 respectively in the three preceding summer quarters; thus it may safely be assumed that the urban birth-rate continues to decline. We are fortunately able to measure the recent rate of infant mortality free from the disturbing factor of untrustworthy estimates of population. During the 13 weeks of the past summer quarter, ending on the 1st inst., the deaths of infants under one year of age registered in the 77 largest English towns were equal to 113 per 1000 of the births registered in the same period, against 109 in the corresponding period of 1907, 145 in 1908, and 119 in 1909. Thus the rate of infant mortality during the past summer in these large towns was 11 per 1000 below the mean rate in the three preceding summer quarters, showing a decline of almost 10 per cent. It cannot be doubted that the recent awakening of the public conscience respecting the waste of infant life, and the simultaneous weakening of later child life by neglect, ignorance, and sanitary shortcoming, is already yielding substantial results, as the decline in the rate of infant mortality is now being persistently maintained. The death-rate of infants under one year of age during the first nine months of this year in the 77 largest English towns was equal to 108 per 1000 registered births, against 119, the mean rate of infant mortality in these towns in the corresponding periods of the three preceding years, 1907–09. This encouraging result of increased and sustained action by sanitary authorities, in order to cope with the evil of excessive infant mortality, should stimulate to further action the authorities of those towns in which the excess of infant mortality does not at present show the average proportion of this encouraging reduction.

PROFUSE HÆMATURIA THE FIRST SYMPTOM OF HYPERTROPHY OF THE PROSTATE.

IT is well known that hæmaturia may be due to prostatic hypertrophy, but profuse hæmaturia as the first symptom of the disease is a rarity. In the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* M. E. Loumeau has reported the following case. A man, aged 46 years, who now lived a sober, regular life, and whose previous illnesses consisted of a transient attack of gonorrhœa at the age of 21 years and a mild attack of syphilis, which was well treated, at the age of 25 years, noticed with surprise on Feb. 12th, 1910, that the first urine passed in the morning had a slightly rosy tinge. This colour deepened progressively until the morning of the 17th, when the urine was distinctly bloody. During the day the hæmaturia became still more marked and large clots were passed, causing micturition to be more and more difficult and painful. In the afternoon M. Loumeau saw the patient in consultation. He was pale and uneasy, and was passing reddish-purple urine. A No. 18 bent (*béquille*) catheter was easily passed and much liquid and coagulated blood was evacuated from the bladder, which was then washed out with warm boric lotion until blood ceased to flow from the catheter. Rectal examination showed the presence of a doughy mass in the bladder. In consequence of the spontaneity and abundance of the hæmaturia, which was not preceded by any renal colic, the mass was thought to be a tumour. The intensity of the hæmorrhage rendered it impossible to verify the diagnosis with the cystoscope. About midnight the bladder became distended with clots which could not be passed. Catheterism was attempted by a practitioner, but he could not pass an obstacle deep in the urethra, and M. Loumeau was again summoned. He found the patient in great pain from the retention, and the bedclothes soaked by the uninterrupted flow of blood. A No. 20 bent cathether was passed, after momentary arrest due to slight urethral spasm, and the patient was relieved. The catheter was retained in the bladder. On the 18th the hæmaturia was unabated, and as it had proved intractable to medical treatment and threatened the patient's life M. Loumeau

decided to operate at once. He performed laparotomy under chloroform in Trendelenburg's position. A large opening was made in the bladder and much blood and blackish clots were removed, but no trace of a tumour or ulcer could be found. A citrine fluid was emitted by the ureters, which showed the integrity of the kidneys. The mucous membrane of the bladder was much congested in its whole extent, raised by large sinuous turgescent veins, and coated by an abundant serous transudation. Evidently the mass taken before operation for a tumour consisted of clots. The wound was sutured, drainage-tubes being inserted. For some days drainage was maintained. Recovery was uninterrupted and the hæmaturia ceased. What was the source of the hæmorrhage? For eight years the patient had noticed some difficulty in beginning micturition, and for some months micturition was frequent and painful in the morning. Though the hæmaturia ceased after the cystotomy the urine remained a little turbid, and during the night micturition was difficult and took place twice or thrice. Moreover, there was residual urine which varied in amount between 20 and 100 grammes. After complete emptying of the bladder with the catheter rectal examination showed two indurated nodules in the prostate of the size of an olive. Evidently the hæmaturia was the first sign of a slight and unsuspected hypertrophy of the prostate. It was presumably due to congestion developed around the nodules, which apparently were adenomata. The congestion extended to the whole of the vesical mucous membrane. M. Loumeau suggests that the prostatic hypertrophy was due to chronic prostatitis which was a sequel to the attack of gonorrhœa. The case also illustrates a fact which he has often observed—the onset of prostatic hypertrophy before the age of 50 years, the age given by writers. At this age difficulty in emptying the bladder may be first observed, but the hypertrophy of the prostate must have preceded this by some years.

ULSTER AND EMBASSIES TO CHINA.

THE freedom of the city of Belfast was recently conferred upon Sir John Jordan, K.C.B., His Majesty's present representative at Peking, and the ceremony was the occasion for the appearance of an interesting article in *The Northern Whig* of Sept. 28th from the pen of Sir John Byers dealing with the careers of three eminent Ulster men who were ambassadors to China. Sir John Byers is interested in all matters that belong to the history of Belfast and the province of which it is the capital, so that it was only natural that he should draw the attention of his fellow citizens to the predecessors of the distinguished man whom the city was honouring. Those predecessors were George Macartney, afterwards Earl Macartney; and Henry Pottinger, afterwards Sir Henry Pottinger. Macartney, who was sent out in 1792 as our first ambassador, was the great-grandson of "Black George Macartney," who went to Belfast from Scotland between 1642 and 1649. He became chief magistrate, or "Sovereign" as the title then was, and he should be held in honour by all medical men, for it was through his instrumentality that Belfast obtained a supply of "good and wholesome water"; for, as he mentioned in a proclamation dated July 29th, 1678, "the River which runneth through the Town is very much defiled and abused ..... whereby the water is made altogether unfit for the use of man in meat and drink." Even Belfast of to-day may remember these words with profit. His distinguished descendant's mission, though not successful in establishing a permanent resident at the court of Peking, yet brought about a prolonged period of tranquillity for commercial transactions. After his return he held other important posts, and died in 1806, leaving no heir. The name of Macartney, however, still has an honourable connexion with China in the person of Sir Halliday Macartney, who is councillor to the Chinese Legation in London, and, moreover, a medical man. Pottinger, who is the second on Sir John Byers's list, was appointed Envoy to China in 1840, and it was owing to his labours that the diplomatic victory was won which included the cession of Hong-Kong and the opening of the five treaty ports. As to Sir John Jordan, the present representative at Peking, his work is his best description, and well might Sir John Byers say of him that "he adds to the roll of the honorary burgesses of the city the name of one of the most distinguished Ulstermen of the present period."

THE SUPPLY OF DIPHTHERIA ANTITOXIN BY LOCAL AUTHORITIES.

IT is quite unnecessary to discuss the value of the antitoxin treatment of diphtheria. It has long passed the experimental stage, and those who neglected to use it in cases of diphtheria would lay themselves open to serious chances of scientific criticism. But, nevertheless, there are grounds for believing that antitoxin, for one reason or another, is not always administered as early as could be wished, and that it is not employed as a prophylactic in invaded houses with the routine regularity which preventive medicine demands. We have often, in reviewing the annual reports of medical officers of health, quoted comments indicating the frequency with which cases of diphtheria arrive at an isolation hospital without having already had the advantage of antitoxin inoculation, even although such cases had been ill for several days. Indeed, so frequent are these occurrences that in certain instances medical officers of health have themselves had antitoxin administered when notified cases of this disease have been visited by the health officers and proper treatment had not yet been applied. This delay in the administration of antitoxin is due partly to the want of facilities for prompt bacterioscopic examination and partly to difficulties in obtaining supplies. It may also be due in some measure to the question of expense. These facts have been so obvious to many sanitary authorities that they have themselves obtained a supply of the antitoxin for the use of local medical practitioners upon patients whose means were small, and within recent years large quantities of diphtheria antitoxin have been thus employed. It appears, however, that there have been legal difficulties in the way of this municipal provision of antitoxin, more especially so in its employment from a curative standpoint, and with a view of placing the matter on a satisfactory basis, both curatively and prophylactically, the Local Government Board has recently issued an Order authorising the provision of antitoxin in both these senses. In the circular letter which accompanied this Order the Board drew attention to the fact that the free provision of diphtheria antitoxin was in no sense to be regarded as a substitute for isolation in hospital, and that the prompt administration of antitoxin before the patient was removed might go far to prevent the attack from proving fatal. It is clear, we think, that the vast majority of local authorities throughout the country will welcome this provision for lessening the fatality rate and prevalence of this fatal malady, but Mr. F. W. Alexander, the medical officer of health of Poplar, draws attention in a recent report to an aspect of the question which should not pass unnoticed. In September, 1907, the sanitary committee of this metropolitan borough presented a report to the council emphasising the enormous advantages of antitoxin treatment as shown by figures derived from the Metropolitan Asylums Board and other statistics. The committee also expressed the opinion that in view of the loss, inconvenience, and suffering occasioned by the erroneous notification and removal of

patients not suffering from the disease notified, diphtheria antitoxin should be supplied for use pending the report of the bacteriological examination in cases where such provision cannot be otherwise made. But the council, after consideration of the report, arrived at the conclusion that it could "not enter into competition on an unfair basis with purveyors of drugs and related preparations," and it emphatically refused "to relieve medical practitioners of their natural responsibilities." This expression of opinion raises incidentally some rather far-reaching issues—so far-reaching that we can only briefly indicate them here. It may suggest, for instance, that the arrangements for medical treatment amongst the poor are so unsatisfactory that drugs and kindred preparations cannot, for the payment available, always be administered; and it might, of course, be contended that all sera and cultures not easily obtainable should be provided for the poorer classes by the sanitary authorities. It may reasonably be urged that such municipal action would only be justifiable in dealing with preventable disease; but here, again, we feel ourselves on the horns of a dilemma, since nearly all diseases may be regarded as more or less preventable. For example, in the case of acute rheumatism the early administration of the specific drugs in proper amount may prevent the dreaded complications, and a similar line of argument may be employed as regards venereal diseases. Probably the answer to these problems may be found when the subject of the relation of the State to the medical profession, which is now in the melting-pot, is receiving final consideration, but in the meantime the poorer classes must have antitoxin in their need, and at the present moment the only feasible method of securing its prompt administration appears to be through the agency of the sanitary authorities.

THE MEMORIAL TO THE LATE MISS FLORENCE NIGHTINGALE AT LIVERPOOL: A REGRETTABLE DIVISION OF OPINION.

THE public meeting held in the Liverpool Town-hall on Oct. 13th, at the invitation of the Lord Mayor, to inaugurate a memorial to perpetuate the memory of the late Miss Florence Nightingale disclosed considerable differences of opinion as to the form the memorial should take. Hitherto it had been the custom at such a meeting solely to decide upon the establishment of a memorial fund in honour of a distinguished person, the direction which the memorial should assume being delegated to a committee of the citizens present. On this occasion a departure from custom was witnessed. The committee of the Queen Victoria District Nursing Association, which body desires to build an additional district nurses' home (stated to be urgently needed), approached the Lord Mayor with a scheme, asking that the memorial should take the form of a seventh district nurses' home, the funds to be applied to its erection and maintenance. No one would deny that what the association seeks to do is very proper and useful, but the claims of nurses in need of pecuniary assistance to the benefits of a memorial fund to their dead leader began to receive attention prior to the date of the town-hall meeting. Letters appeared in the columns of the local press pointing out the needs of many nurses of advancing years, and warmly advocating that the funds of the proposed memorial should be applied in the direction of their necessities. In the face of this correspondence it would have been perhaps well if the Lord Mayor had fallen back upon precedents and had accepted the suggestion of Mr. J. E. Sampson, the city coroner, to refer the details of the memorial fund to a committee of those present at the meeting. This, however, he decided not to do, but put to the general meeting a proposal of the Rev. T. W. M. Lund for the establishment of a memorial fund to be applied in the direction of a "home of rest" or a pension fund for necessitous nurses. This proposal was lost by the bare margin of 2 votes, Sir James Barr and others warmly taking up the cudgels on behalf of the poor nurses. A majority of 2 votes, therefore, stands in favour of the scheme to which Mr. Lund's was an amendment—viz., of founding a seventh district nurses' home. This vote cannot be a matter of congratulation to the committee of the Queen Victoria District Nursing Association, and there is a widely expressed fear that a chilling effect may result on the liberality of the citizens of Liverpool. May there not be yet time to reconsider the position and to allow the needs of the nurses at least to be met by a share in the benefits of the Florence Nightingale Memorial?

SYPHILIS AND MUSCULAR ATROPHY.

OUR nosological conception of that commonest of spinal cord diseases, tabes dorsalis, has been undergoing important changes in recent years. The discovery of the organism of syphilis has sensibly modified our ideas on the whole question of syphilitic infection. If we trace the steps whereby the syphilitic virus establishes its hold on the medullary nervous system, they are found to be constituted somewhat as follows. In a great number of cases secondary syphilis is accompanied by a mononuclear lymphocytosis of the cerebro-spinal fluid—the clinical expression of which is headache—a meningeal reaction on which mercury exerts a suppressing influence. The histological processes in this meningeal reaction of secondary syphilis have been carefully studied by Sezary. He has found subarachnoid infiltrations more particularly on the posterior aspect of the cord and in the lumbar region, vascular lesions, and interstitial changes in the posterior roots and posterior root ganglia. We know that this meningeal condition may be entirely unsuspected, to be discovered only by rachicentesis, or that its sole clinical manifestation, according to Babinski and Charpentier, may be the sign of Argyll Robertson. Should the syphilitic toxin maintain its hold the development of syphilitic meningo-myelitis is most likely to occur. Some of its varieties present a considerable resemblance to tabes; many instances of "pseudo-tabes syphilitica" have been recorded; rarely, symptoms both of tabes and syphilitic meningo-myelitis may occur together. The distance in time which often elapses between the syphilitic infection and the appearance of tabetic symptoms can no longer be justifiably advanced as a criterion to distinguish tabes from other forms of medullary syphilis, nor, indeed, can the difference in the response of the two types to antispecific treatment be so considered. Fournier's "parasyphilis" is losing somewhat of its significance. Syphilis in its attack on the nervous system may reveal itself in most diverse ways, from acute meningitis to general paralysis. We have reached a period when the neurologist is thinking less of systematised diseases and more of clinical syndromes. These considerations apply forcibly to the question of muscular atrophy of spinal origin, as is clearly demonstrated by M. Felix Rose and M. Henri Rendu in *La Semaine Médicale* of May 11th. The Aran-Duchenne type of amyotrophy is not a disease, that is, not a nosological entity, but a clinical syndrome. It may arise in the course of tabes dorsalis, and it may develop by itself where the sole preceding etiological factor is syphilis. In fact, Léri, struck with the frequency with which syphilitic antecedents are noted in the various cases of progressive muscular atrophy of this type scattered through medical literature, goes so far as to say that the commonest cause of the syndrome is syphilitic meningo-myelitis. Pathological evidence is not wanting to confirm this view of many cases of spinal amyotrophy. The occurrence of chronic anterior poliomyelitis of syphilitic

origin is a fact not perhaps sufficiently realised. Tabetic muscular atrophy (that is, of the Aran-Duchenne type) is indistinguishable from that of medullary syphilis. Further, muscular atrophy may appear in the course of general paralysis. The why and the wherefore of the variability in the nervous sequelæ of syphilis is still quite unknown; why tabes should appear in one case and meningo-myelitis in another, why muscular atrophy should sometimes be present, sometimes absent, are problems for the future to decide. The view the authors take is that certain syphilitic lesions, notably meningo-myelitis, alter in the course of their evolution; they lose their specific characteristics and tend to give place to chronic lesions, which in their turn produce definite cord changes, by relative ischæmia or otherwise, such as atrophy of anterior horn motor cells.

A CASE OF LEPROSY TRACEABLE TO INOCULATION.

IN the *South African Medical Record* of Sept. 10th appears an interesting note by Dr. W. Russell. A healthy boy of 14, the son of a Dutch farmer and an Englishwoman, cut his foot with broken glass while bathing. The wound bled freely, and a native suggested the application of tobacco as a styptic, offering a piece which he was chewing at the time. This was bandaged to the wound with a handkerchief and kept on in this way for three days, when the wound seemed to have healed almost completely. During the boy's life at a boarding school the wound kept on breaking out every two or three months for about three years, so that a medical man who saw him, suspecting necrosis of bone, made an incision and scraped the wound. About this time nasal and pharyngeal symptoms appeared and he become hoarse; a rash developed, and the boy became so unwell that his studies were discontinued. He was troubled by fainting attacks and shooting pains in the limbs. After nine months' treatment for syphilis, a diagnosis in which several practitioners concurred, he was taken to Dr. Russell, who found him well nourished, speaking with a husky voice, but showing no pharyngeal ulceration, though the mucous membrane was very congested, and there was a nasal discharge. The wound had healed, no rash was seen, but his hair was coming out. Under further treatment for syphilis he became worse, and Dr. Russell found bacillus lepræ in the nasal secretion. During the following six months the facies of leprosy developed, the hair continued to come out, anæsthetic patches appeared on the body, and an ulcer formed on the right foot, with painful fissures between the toes. He died about 11 years after the inoculation, which was attributed to the tobacco dressing, inquiry showing that the native from whose mouth the plug came was a leper, who had died about four years after his act of mistaken kindness. Moreover, there was no other conceivable source of infection.

THE OILS, FATS, AND WAXES OF THE PHARMACOPŒIA.

MUCH progress has been made since the publication of the 1898 edition of the British Pharmacopœia in the analytical examination of the official oils, fats, and waxes, and the data which have been collected will be of considerable value to the compilers of the next edition. An evening meeting of the Pharmaceutical Society on Oct. 11th was devoted to the consideration of this subject, and Mr. F. C. J. Bird and Mr. E. W. Lucas read communications in which they suggested a basis for the monographs on oils, fats, and waxes for the next Pharmacopœia. They expressed the opinion that the tests in the official monographs should be as comprehensive as possible, since much trouble has been caused in the past owing to the insufficiency of the official tests as a means of ensuring that degree of purity necessary in articles required for medicinal use. They suggest the introduction of methods which, although long practised by analytical chemists, have as yet found no place in the British Pharmacopœia in connexion with the fixed oils and fats. The new analytical figures which these observers think it desirable to introduce are the saponification value, the iodine value, the percentage of free acid, the percentage of unsaponifiable matter, and the refractive index. Mr. Bird and Mr. Lucas, who were requested by the Committee of Reference in Pharmacy to the Pharmacopœia Committee of the General Medical Council, of which they are members, to investigate this subject, submit the suggestions for professional criticism. It may be added that they take the view that the tests of the Pharmacopœia should be so framed that when applied in conjunction with the definition in the context they should make it perfectly certain that the article under examination is of the quality and purity intended by the Pharmacopœia for use in medicine. They regard the Pharmacopœia as a means of ascertaining the suitability of the articles enumerated therein for use in the dispensing of prescriptions and the preparation of medicines, and it is from this standpoint alone that they have drafted the suggested monographs.

SCARES.

IT is difficult to understand why some of our newspapers are so eager to become the bearers of evil tidings to the public, and why they should hasten to announce the bad news before the facts have been properly verified. Last week many persons were startled to find in their morning paper a statement headed in large type "Cholera in London." On looking more closely into the matter we found that the basis for this assertion was the occurrence of a fatal case of gastro-enteritis in a London hospital, the existence of cholera, however, being subsequently disproved by bacterioscopic investigation. Nevertheless, a thrill of needless fear must have been experienced by many nervous people who have a dread of exotic infection. A couple of days later huge posters were issued by a daily paper announcing in large letters "Plague in the Thames." Upon inquiry we discovered that this alarming announcement related to a single ship-borne case of plague, landed from a Bombay steamer, safely isolated by the officers of the London port sanitary authority in its hospital at Denton, from which there could be little possibility of extension of the infection outside. Almost simultaneously another paragraph appeared with the disturbing intelligence of an "Outbreak of Spotted Fever." Upon investigation we found that the so-called outbreak comprised in this instance also only a single case. The use of the term "spotted" fever instead of cerebro-spinal fever is no doubt attended with more alarm, as any illness with an eruption is greatly dreaded. And the use of the term "spotted" may be wrong, since in the majority of cases, in this country at least, the patients attacked by cerebro-spinal fever exhibit no spots at all. It is a misuse of the power of the press to employ it in curdling the blood or making the flesh of nervous or ignorant people to creep. It is, we know, urged in defence that the press must "put the public on their guard." But there can be no excuse for announcing cholera in London when there is none. It cannot be said that if plague has arrived in the Thames the individual readers of the announcement can as a result take any practical steps by themselves to escape from the disease. Rather must they rely upon the sanitary authorities, local and central, to protect them from imported infections. To produce panic in the public mind is not the way, in our opinion, to prevent the spread of exotic disease; and the insertion in newspapers of

alarming headlines based upon very slender foundations seems to be both unnecessary and improper from the medical point of view.

SERO-THERAPEUTIC TREATMENT IN OPHTHALMIC AFFECTIONS.

AN article with the above heading appears in the October number of *La Clinique Ophtalmologique* from the pen of Dr. Alexandroff, who, as ophthalmic surgeon to the "Eugenie" Hospital of Ajaccio, has had large experience. He only gives the results of those cases in which he has followed out this method of treatment for a period sufficient to form definite conclusions in regard to its success or failure in infectious cases. Dr. Alexandroff has invariably employed the anti-diphtheritic serum of M. Roux and has always practised the simple hypodermic proceeding. He has never used more than four injections of 10 cubic centimetres each of the fluid as an injection. He has never seen any untoward accident from the use of the serum. In almost every case he has obtained favourable results, and in some cases the results have been phenomenal, as in the following instance. A lady, aged 42 years, whose state of general health was perfect, consulted Dr. Alexandroff with very alarming symptoms. She had been suffering from severe neuralgia arising from disease of a canine tooth, when after using human milk as a collyrium the eye on the same side became red and extremely painful. On examination it was found that there was a serpiginous ulcer with hypopyon. The healthy condition of the lacrymal passages, with the unusual position of the ulcer, which was seated at the upper border of the cornea near the limbus, led him to conclude that there had been an ulcer of dental origin which had become infected by the milk. The treatment adopted was removal of the root of the canine tooth and three cauterisations, in spite of which the ulcer continued to advance. The upper two-thirds of the cornea became opaque, and the hypopyon filled a large part of the anterior chamber; perforation seemed to be imminent, and a Saemisch's keratotomy was proposed, but was strongly objected to by the patient. Under these conditions, although up to that time sceptical, Dr. Alexandroff bethought himself of treatment by serotherapy, and requested his colleague Dr. Pompeani to make an injection of 10 cubic centimetres. The next day the patient failed to present herself, and Dr. Alexandroff supposed that the eye was lost, and was agreeably surprised when on the day following she appeared in good spirits, stating that she had slept well for the first time for 12 nights. Upon examining the eye the hypopyon was in great part absorbed, the cornea was clearing, and the ulcer presented a more wholesome aspect. After two more injections recovery was complete. Several other cases are reported by Dr. Alexandroff: one of a child with infective conjunctivitis, one of a patient suffering from ague, one of keratitis after an operation for cataract, and one of an ulcer of the cornea after a blow with a stone, in all of which a satisfactory result was obtained.

WE hear with regret that the death of Dr. Sydney Ringer has taken place at his country residence at Lastingham, Yorkshire. Dr. Ringer, who was 76 years of age, was a Fellow of the Royal Society, Emeritus Professor of Medicine at University College and consulting physician to the hospital, and the author of the well-known "Handbook of Therapeutics."

ACCORDING to statistics contained in the last report of the Commissioners of Customs and Excise, the net receipts from the Medicine Stamp Duty during the years 1901–10 were as follow: 1901, £297,480; 1902, £306,337; 1903, £333,371; 1904, £323,446; 1905, £331,439; 1906, £324,112; 1907, £327,106; 1908, £334,142; 1909, £315,489; 1910, £313,114.

THE opening lecture of the North-East London Post-graduate College will be delivered at the Prince of Wales's General Hospital, Tottenham, N., on Thursday, Oct. 27th, at 4.30 P.M., by Sir T. Lauder Brunton. Any member of the profession desiring to attend the lecture is asked to communicate his wish to the Dean of the school at the hospital.

THE Page May Memorial Lectures in Physiology will be delivered by Professor C. S. Sherrington at University College, London, on Oct. 24th and 25th, Nov. 7th and 8th, and Nov. 28th and 29th, at 4.30 P.M.

TOWN-PLANNING CONFERENCE AND EXHIBITION.

WHATEVER may be thought of the debates at the Town-Planning Conference or of the exhibtion of drawings and models held at the Royal Academy from Oct. 10th to 22nd, the mere fact that such a conference and exhibition have taken place is a most hopeful sign of the times. It does seem as if we were awakening as a nation from lethargy, but it is sad, particularly at the exhibition, to find that even in our own country nearly all the wall space was covered with maps and drawings of what had been done by other nations. Yet that we should have had the courage to expose ourselves to such unflattering comparisons is surely a wholesome indication of a vigorous desire to set our own house in order. The position was very clearly put by the President of the Local Government Board at the opening of the Conference. Every 15 years, he said, some 500,000 acres of agricultural land were converted into building land. But as all this building is left to mere chance the municipal corporations, at their last annual gathering, estimated that during the recent 30 years from £14,000,000 to £15,000,000 had been spent in undoing mistakes that should never have been committed. For instance, as Mr. Raymond Unwin subsequently pointed out, it may generally be noted that in and near towns the land on either side of railway lines or canals is covered with cottages and dwellings. Obviously these are the sites that should be occupied by factories and workshops, thus reducing the traffic of merchandise through residential streets. But in building towns no one had given a thought to the needs of traffic and its probable developments. Even to-day 5000 houses are being built or rebuilt in London during the course of a year with very little regard to the present and future requirements of traffic. In this respect one of the few things shown by English exhibitors is a bold scheme for removing Charing Cross Station to the Surrey side. A monumental approach would be made by bridging the Thames with a broad roadway protected on each side by a graceful colonnade where people could shop in rainy weather on the model of the rue de Rivoli in Paris. But if, in Paris, this is convenient for the purchaser, the shops are insufficiently lighted by the direct rays of sunlight and have even less air and light at the back. On the proposed bridge the shops at the back would have a splendid look-out over the Thames, and would be much more healthy than the shops, for instance, in the Strand.

Even the most enthusiastic advocates of town planning have not yet fully appreciated the question of direct rays of sunlight. Obviously, in a rainy climate, the street colonnade like that of the rue de Rivoli, reproduced in London in front of the Hotel Ritz, is most convenient, and it lends itself to handsome architectural designs. But, from the health point of view, it cannot be approved unless there is ample compensation of unimpeded rays of light in the rear of the premises, and such would be the case on a bridge. In this respect we are glad to see M. A. Augustin Rey is again to the forefront as an apostle of light. He shows astronomical observations affecting ten of the largest towns, including London, with a total population of 25,000,000, all in temperate climates and with houses of from two to six storeys high. His obvious teaching is that we have

not only to reckon with the width of the street: houses that have their axis directed from north to south will receive the greatest number of luminous rays on their east and west walls, and will be more healthy than those in streets running west to east. The latter streets must, he suggests, be much wider. This question of the width of streets being modified according to the direction in which they run, so that the houses may receive an equal share of sunshine, is not yet included in town-planning schemes, and it deserves very careful consideration.

Town planning, however, is not simply a question of light and air, space, and drainage. Sanitary engineering plays a very important part, but even from the public health point of view art is most essential. We demand the city beautiful not merely because a thing of beauty is a joy for ever, but because joy is essentially a wholesome feeling. Beauty is preventive and curative medicine. It helps to make us happy and therefore to keep us in good health, while if, unfortunately, sickness has successfully invaded our system, we are much more likely to find the necessary vitality to recover in the contemplation of things that are graceful, pleasing, and inspiring than in the contemplation of drab ugliness. Thus, from whatever aspect the question may be viewed, we must congratulate ourselves on the successful gathering of the Town-Planning Conference. We wish that at the exhibition there had been more ample explanations given and better measures taken to interest the general public. It is the general public that will have to pay for town improvements, and, unless it understands, it is apt not merely to grumble but to vote against the promotion of much-needed reforms. Professor G. H. Reilly said that for the former "benevolent despotism of the great landlords ..... we must substitute an organised democracy." That being so, no opportunity should be lost of educating that democracy.

We have made no attempt to review the various utterances of many distinguished persons upon the different subjects that come under the heading of town-planning, but the movement is so essentially one bound up in the closest way with the public health that a brief record of its progress is necessary.

FORTY-SIXTH ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR IRELAND.

THIS report contains a detailed account of the causes of death, as well as of the births and marriages registered in Ireland during the year 1909. In the present instance the Lord Lieutenant has reverted to the custom, temporarily, and perhaps unavoidably, suspended on the occasion of the appointment of the late Dr. Grimshaw's successor—namely, that of selecting for the important office of Registrar-General a member of the medical profession, Sir William J. Thompson, who is a distinguished graduate of Trinity College and a physician-in-ordinary to the Lord Lieutenant of Ireland.

In noticing the appearance of the annual report for 1908 we congratulated Sir Robert Matheson on his promptitude in issuing that useful volume in time to be available for preventive purposes. We have now the pleasure of repeating to Sir William J. Thompson our congratulations; for his report, like that of his predecessor, has been published within little more than six months of the close of the period to which it relates. And we must reiterate the hope expressed in previous numbers of THE LANCET that equal promptitude may shortly be attained in the issue of similar information for other divisions of the kingdom. The assistance rendered by Dr. Ninian M. Falkiner in preparing the statistical portion of their reports has been gracefully acknowledged both by Sir William J. Thompson and by his predecessor. For several years past Dr. Falkiner has bestowed much labour on the analysis of Irish mortality and on the study of its causes, and he merits the praise accorded to him by each of his official superiors.

Vital Stastistics.

According to the best available estimate, the population of the sister isle would seem to be decreasing. There is no official record concerning immigration, but the loss by emigration is put down at 28,676, whilst the natural increase of the population by excess of births over deaths did not exceed 27,786. There would therefore appear to have been a decrease of 890 in the population at the end of 1909. Compared with the decennial averages, the rates both of marriages and of births show a slight increase in the year referred to, but the rate of mortality has fallen by 0·6 per 1000 as compared with the same average. In the year 1909 the general death-rate in Ireland was equal to 17·2 per 1000 of the population, which was estimated at 4,371,570 at the middle of that year. As was also the case in England, the death-rates were highest in the more distinctly urban, and lowest in the rural, areas of Ireland. For example, whilst the rates did not exceed 13 1 per 1000 living in County Kerry and 13·5 in County Clare, they rose to 18·2 in Belfast, 18 9 in Armagh, and 23 4 in Dublin. Of the total deaths registered last year, 4·5 per cent. occurred in infirmaries or hospitals unconnected with the Poor-law, and 13·8 per cent. in workhouses or workhouse hospitals.

For several past years a prominent feature in Irish mortality has been the relative lowness of the rate among the younger portion of the community, the death-rate under the age of five years being only 33·16 in each 1000 living at that age. Corresponding data for 1909 in England and Wales are not yet available for comparison, but the average English rate at the same age in the ten years 1899–1908 was 48·9 per 1000.

In the present report the usual interesting table is repeated showing the occupation or social position of the persons whose deaths were reported in Dublin; it also shows the mortality at each of six periods of life, and the number of deaths from specified causes. From this table we gather that among the families of the professional and independent classes the annual death-rate from all causes was 16 5 per 1000 persons living in that class; among the middle-class (consisting of civil servants, clerks, commercial assistants, &c.) the rate was also 16·5; among the artisan class and petty shopkeepers the rate was 16·8; whilst among the general service class (including the army, police, domestic servants, coach and car drivers, and others above the rank of paupers) the rate was 23·0 per 1000 living.

Uncertified Deaths.—Ill-defined causes of Death.

Commenting on the subject of ill-defined and uncertified causes of death, the Registrar-General very properly appeals to the medical profession in Ireland for greater care in filling up their certificates of death. It is the desire, he urges, of all medical statisticians and advocates of sanitary improvement that the diseases and conditions causing death should be definitely and accurately recorded and legally certified for entry in the General Register Office. The high percentage of uncertified deaths is an undesirable feature of Irish vital statistics, and compares unfavourably with the figures for England and Scotland. In Ireland the proportion of uncertified to total deaths still stands at 25 per cent., whilst the percentages in England and Scotland are only 1·4 and 2·3 respectively.

To this report are appended the usual tables of causes of death according to the English model in vogue since 1901. Among general diseases, those which call for especial notice are pneumonia and tuberculosis. From the various forms of pneumonia the loss of life last year was higher than in any other year since 1899, nearly 6 per cent. of the total mortality having been due to that disease. In the year under notice the death-rate from pneumonia was equal to 99 per 100,000 living, having increased from 64 per 100,000 since the year 1888. Of the deaths from lobar pneumonia only 17 per cent., whilst of those from broncho-pneumonia more than 60 per cent., occurred in persons below the age of 20 years.

Decrease of Mortality from Tuberculous Disease.

From tuberculosis in all its forms a still further decrease in mortality is recorded in 1909—the number of deaths in that year having been 10,594, or fewer by 699 than in 1908, a reduction of more than 6 per cent. The Registrar-General attributes this result very largely to the educational work of the Countess of Aberdeen, as carried on under her patronage by the Women's National Health Association. In the year under notice the deaths from pulmonary tuberculosis numbered 8051; they were fewer by 460 than the number registered in the previous year, and were below the annual average in the decennium ending with 1908 by not less than 1288. It is important to note that according to Irish experience the loss

of life from pulmonary tuberculosis is nearly equal in both sexes, whereas English experience shows the mortality to be at the present time enormously greater among males, although this has not always been the case. In Ireland the greatest fatality from this disease occurs in the age-period 25–35 years, the death-rate among men being 3·78 per 1000 living, and among women 3·29 per 1000. In England pulmonary tuberculosis is most fatal to the male sex at the age-group 45–55 years, and to the female sex at the age-group 35–45 years. A highly interesting table is inserted in this report showing the mortality from tuberculous phthisis among the several social classes in the Dublin registration area. The figures refer to the year 1909. From this table we learn that the rate per 1000 living, represented by deaths from tuberculous phthisis among the families of the professional and independent class was 0·29, among the families of the middle class the rate was 1·76, among the families of the artisan class and petty shopkeepers it was 2·19, and among the families of the general service class it was 2·31.

Infantile Mortality.

In respect of infantile mortality—i.e., the rate of death under one year per 1000 births—Ireland compares favourably with the other divisions of the United Kingdom. The rate last year was 92 per 1000 in Ireland, whilst it was 109 in England and 121 in Scotland. Infantile mortality varies considerably in the urban as compared with the rural parts of Ireland, for whilst it amounted to 123 per 1000 in the "civic areas"—i.e., the unions containing towns with populations of not less than 10,000—it did not exceed 71 per 1000 in the remainder of Ireland. If the mortality in the principal urban districts of Ireland be contrasted with that in the country districts the differences in infantile mortality will be found to be still more pronounced. Thus in the Kilkenny urban district the rate amounted to as much as 155 per 1000 births (which is higher than the Liverpool rate for the same period), whilst in the sparsely-populated district of Tralee the rate was only 70 in each 1000 registered births.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

A MEETING of the General Committee was held on Wednesday, Oct. 12th, in the library of the Royal College of Physicians of London. Sir Thomas Barlow occupied the chair. A brief note of the meeting has already appeared in our columns.

The minutes of the last meeting were read and confirmed. Letters of regret for absence were read from the following: Mr. C. A. Ballance, Dr. J. W. Ballantyne, Mr. Gilbert Barling, Sir John Byers, Dr. W. Collier, Sir J. Halliday Croom, Mr. Clinton Dent, Dr. Gordon Dill, Mr. Frederic S. Eve, Dr. Ferrier, Dr. J. Magee Finny, Dr. G. A. Gibson, Professor J. Glaister, Dr. Dundas Grant, Mr. J. W. B. Hodsdon, Dr. W. Allan Jamieson, Mr. J. C. Keston, Sir Donald MacAlister, Professor Howard Marsh, Dr. J. Marnoch, Dr. Alexander Miles, Sir George Hare Philipson, Professor R. W. Reid, Dr. Lloyd Roberts, Mr. A. W. Mayo Robson, Professor Saundby, Sir James Sawyer, Mr. W. G. Spencer, Professor W. Stirling, Mr. John Lynn Thomas, Sir W. J. Thompson, Professor Arthur Thomson, and Dr. Wethered.

On the report of the Advisory Board, which was appointed on Feb. 7th last,[1] it was moved by Dr. PAVY, and seconded by Dr. NORMAN MOORE, that Sir Thomas Barlow be asked to become President of the next International Medical Congress. This was carried unanimously, and Sir Thomas Barlow accepted the position.

Mr. BUTLIN proposed the next resolution of the Advisory Board, viz.:—

That there be two treasurers of the Congress, of whom one should be a layman of high financial position and the other an eminent medical man.

He said that he felt considerable doubt as to the advisability of appointing a lay treasurer.

Dr. PASTEUR seconded the resolution for purposes of discussion.

Dr. NORMAN MOORE spoke against the appointment of a lay treasurer, although quite willing to invite men of science who were not medical men to take part in the work of the Congress.

Sir MALCOLM MORRIS said that the Advisory Board had had in mind the desirability of inviting laymen to bear some part of the expense of the Congress. There was no doubt that international congresses were of enormous benefit to the public of the countries where they were held, and in other countries were generally supported by public money.

Dr. KNOWSLEY SIBLEY proposed that there should be two treasurers to the Congress, and that they should both be medical men.

Dr. SAMUEL WEST seconded the amendment, which was carried.

Mr. BUTLIN then proposed that one of the treasurers be Mr. G. H. Makins, and in doing so alluded to the work performed by Mr. Makins at the previous international congress held in London.

Dr. PAVY seconded this proposal, which was unanimously carried, and it was agreed to leave the appointment of the second treasurer to the Executive Committee.

Sir RICHARD DOUGLAS POWELL proposed, Dr. HALE WHITE seconded, and it was carried, that Dr. W. P. Herringham be elected honorary general secretary of the Congress.

Dr. HERRINGHAM said that he could not accept that position without publicly expressing his great indebtedness to Mr. D'Arcy Power, who had hitherto been secretary of the National and General Committees, for his extreme courtesy and patience in explaining the details and mechanism of the work. He hoped that Mr. Power, who, he supposed, would be promoted to the Executive Committee, would continue to afford him similar assistance.

Dr. PAVY wished to add his testimony to the great amount of labour which Mr. D'Arcy Power had already for many years given to the work of the committee.

Sir HENRY MORRIS proposed—

That an Organising Committee be formed which shall select a smal Executive Committee and shall have power to add to its number.

Dr. NORMAN MOORE seconded.

The following gentlemen were appointed on the Organising Committee:—Dr. T. D. Acland, Sir Clifford Allbutt, Sir W. Allchin, Sir Charles Ball, Mr. C. A. Ballance, Dr. Freeland Barbour, Professor H. G. Barling, Sir James Barr, Dr. A. G. Barrs, Sir Wm. Bennett, Mr. G. A. Berry, Mr. L. A. Bidwell, Mr. A. A. Bowlby, Mr. Stanley Boyd, Dr. J. Rose Bradford, Dr. Byrom Bramwell, Surgeon-General A. M. Branfoot, Sir James Crichton-Browne, Dr. Alexander Bruce, Dr. Mitchell Bruce, Sir Lauder Brunton, Mr. Butlin, Dr. Dudley Buxton, Sir John Byers, Sir H. Cameron, Sir Francis Champneys, Sir Havelock Charles, Sir Watson Cheyne, Sir William Church, Mr. Andrew Clark, Professor Michell Clarke, Dr. T. C. Clouston, Professor James Craig, Dr. P. J. Cremen, Sir Anderson Critchett, Sir Halliday Croom, Dr. H. Davy, Mr. Clinton Dent, Dr. Gordon Dill, Sir Dyce Duckworth, Professor William Dyson, Mr. F. S. Eve, Mr. Harry Fenwick, Dr. Ferrier, Professor D. W. Finlay, Dr. Magee Finny, Dr. J. Kingston Fowler, Sir Thomas Fraser, Professor S. Gemmell, Dr. G. A. Gibson, Professor T. R. Glynn, Mr. R. J. Godlee, Dr. Edwin Goodall, Mr. A. Pearce Gould, Dr. W. S. A. Griffith, Director-General W. L. Gubbins, Dr. F. W. Hewitt, Dr. G. E. Herman, Mr. J. W. B. Hodsdon, Sir Victor Horsley, the President of the Royal College of Physicians of Ireland, Dr. W. A. Jamieson, Dr. Macnaughton Jones, Dr. Robert Jones, Sir Alfred Keogh, Dr. Percy Kidd, Sir Francis Laking, Mr. Ernest Lane, Dr. H. A. Latimer, Professor J. A. Lindsay, Professor James Little, Professor H. Littlejohn, Director-General C. P. Lukis, Sir Donald MacAlister, Sir William Macewen, Professor Dixon Mann, Sir Patrick Manson, Professor Howard Marsh, Dr. C. J. Martin, Dr. Charles Mercier, Dr. Alexander Miles, Sir J. W. Moore, Dr. Norman Moore, Sir Henry Morris, Sir Malcolm Morris, Dr. F. W. Mott, Mr. B. G. A. Moynihan, Professor R. Muir, Sir Shirley Murphy, Sir T. Myles, Professor J. Musgrove, Dr. A. Newsholme, Sir Christopher Nixon, Sir Thomas Oliver, Professor W. Osler, Sir Isambard Owen, Dr. R. W. Philip, Sir George Hare Philipson, Dr. F. W. Pavy, Inspector-General Sir James Porter, Sir Richard Douglas Powell, Mr. D'Arcy Power, Sir W. H. Power, Mr. J. H. Pringle, Professor J. P. Pye, Professor R. J. Pye-Smith, Dr. Guthrie Rankin, Sir James Reid, Dr. C. J. Renshaw, Mr. J. Scott Riddell, Mr. A. W.

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Mayo Robson, Dr. H. D. Rolleston, Professor Ronald Ross, Dr. Amand Routh, Dr. W. Russell, Dr. F. M. Sandwith, Professor R. Saundby, Dr. G. H. Savage, Professor E. A. Schäfer, Dr. S. J. Sharkey, Professor T. Sinclair, Dr. Percy Smith, Dr. Walter Smith, Sir Wm. Smyly, Dr. Herbert Spencer, Dr. Squire Sprigge, Dr. J. E. Squire, Professor A. M. Stalker, Professor E. H. Starling, Mr. H. J. Stiles, Professor J. Swain, Sir Henry Swanzy, Mr. Charters Symonds, Dr. F. Taylor, Professor G. D. Thane, Professor Alexis Thomson, Professor Arthur Thomson, Professor W. Thorburn, Sir Frederick Treves, Dr. Logan Turner, Sir John Tweedy, Dr. J. C. Uhthoff, Dr. C. T Vachell, Dr. Norman Walker, Mr. David Wallace, Dr. W. Hale White, Dr. B. A. Whitelegge, Sir W. Whitla, Dr. Dawson Williams, Sir John Williams, and President Bertram Windle.

Sir DYCE DUCKWORTH then proposed :—

That it is advisable that distinguished laymen be invited to become members of the Congress.

This was seconded by Sir MALCOLM MORRIS.

After some discussion, in which Sir ANDERSON CRITCHETT, Dr. PASTEUR, Mr. MAKINS, Dr. SQUIRE, Mr. PEARCE GOULD, Mr. ARMIT, and Dr. BASHFORD joined, it was resolved :—

That it is advisable that distinguished laymen be invited to associate themselves with the work of the Congress, and that such invitations be in the hands of the Executive Committee.

The date of the Congress led to considerable discussion. The date proposed by the Advisory Board was from July 29th to August 6th, 1913, and a resolution to this effect was formally moved by Mr. MAKINS. He said, however, that the choice of a date was extremely difficult for several reasons, and that he hoped the General Committee would carefully consider the matter before coming to any resolution. On the one hand, the Congress could not be earlier than the date proposed, as our German colleagues could not attend if it were, and, indeed, the date proposed was earlier than that which Dr. Pavy, after conference with the German representatives, had originally proposed in the Advisory Committee; secondly, Bank Holiday came in the middle of the proposed meeting, which might possibly lead to considerable inconvenience; and a third difficulty was that the proposed date clashed with the meeting of the British Medical Association. He therefore moved the resolution rather to open the subject for discussion than to support strongly the date originally fixed.

Dr. NORMAN MOORE seconded the proposal.

Mr. BUTLIN said that he had been present when the date had been fixed by the Advisory Committee, and had himself not realised that the British Medical Association made it so regular a custom to meet at that date as he had since found was the case. He thought it would be a pity if some arrangement could not be come to with the Association.

Sir MALCOLM MORRIS pointed out that if, as was customary, royal patronage was sought for the Congress, the date of the meeting could not be settled without consulting the wishes of royalty.

Several speakers emphasised the extreme undesirability of creating ill-will in a matter of this kind and said that it was of the utmost importance that the spirit in which the Congress was to be got up should not be impaired by any feeling of hostility.

It was officially resolved, on the motion of Sir HENRY MORRIS, that this matter be not decided that day, but that it be left in the hands of the President and of the executive officers to settle the date, and that they be at liberty to receive any communications from, or to confer with, the officers of the British Medical Association.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7420 births and 4260 deaths were registered during the week ending Oct. 15th. The annual rate of mortality in these towns, which had been equal to 13 3 and 12 8 per 1000 in the two preceding weeks, rose again last week to 13·1. During the last summer quarter the death-rate in these towns averaged 11·8 per 1000, corresponding with the rate that prevailed in the summer quarter of last year. In London the death-rate last quarter, calculated on the probably over-estimated population, did not exceed 11·0 per 1000. The lowest reported annual death-rates last week in these 77 towns were 5·0 in Handsworth, 6·7 in East Ham, 6·9 in Willesden, and 7·0 in Leyton and in Walthamstow; the rates in the other towns ranged upwards to 19·4 in Burnley, 19·5 in Middlesbrough, 20·3 in Oldham, and 23·5 in Warrington. In London the reported death-rate last week did not exceed 12 8 per 1000. The 4260 deaths from all causes registered in the 77 towns last week showed an increase of 97 upon the number returned in the previous week, and included 504 which were referred to the principal epidemic diseases, against numbers declining from 720 to 497 in the seven preceding weeks; of these 504 deaths, 296 resulted from diarrhœa, 51 from measles, 47 from whooping-cough, 43 from enteric fever, 34 from diphtheria, and 33 from scarlet fever, but not one from smallpox. The mean annual rate of mortality from these diseases in the 77 towns last week was 1·6 per 1000, against 2·0, 1·8, 1 6, and 1·5 in the four preceding weeks. No death from any of these epidemic diseases was registered last week in Leyton, Wolverhampton, Handsworth, Hastings, Dewsbury, and Burton-on-Trent; the annual death-rates therefrom ranged upwards, however, to 3 9 in Burnley, 4·3 in Oldham, 4·5 in Wigan, and 5·5 in Tynemouth. The deaths attributed to diarrhœa in the 77 towns, which had declined in the six preceding weeks from 527 to 311, further fell last week to 296; in the several towns, however, they caused annual rates ranging upwards to 2·5 in Oldham, 2·8 in Wigan, and 2·9 in Burnley. The 51 fatal cases of measles were within 2 of the number in the previous week, and showed the highest death-rates, 1·3 in Hartlepool and 1·8 in Tynemouth. The 47 deaths from whooping-cough also showed a slight decline, but caused rates equal to 1·6 in Rotherham and 1 8 in Tynemouth. The deaths referred to enteric fever, which had been 38 and 21 in the two previous weeks, rose to 43 last week, and exceeded the number in any previous week of this year; they included 20 in London and its suburban districts (of which 3 occurred in Tottenham), and 2 each in St. Helens, Bradford, and Hull. The 34 fatal cases of diphtheria showed a decline of 8 from the number in the previous week; 11 occurred in London and its suburban districts, 3 each in Birmingham, Liverpool, and Manchester, and 2 in Middlesbrough. The 33 deaths from scarlet fever showed a distinct increase upon recent weekly numbers; 5 were returned both in London and in Liverpool, 3 in Stoke-on-Trent, and 2 in Manchester and Newcastle-on-Tyne. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased in the eight preceding weeks from 1423 to 1706, had further risen to 1745 on Saturday last; 234 new cases of this disease were admitted to these hospitals during last week, against 249 and 245 in the two previous weeks. The 1200 deaths from all causes in London last week included 162 which were referred to pneumonia and other diseases of the respiratory system, showing a further slight decline from the numbers in recent weeks; they were also 16 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 39, or 0·9 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, and in 52 other smaller towns; the 39 uncertified causes of death in the 77 towns last week included 10 in Liverpool, 5 in Birmingham, 3 in South Shields and in Gateshead, and 2 each in Stoke-on-Trent, Leicester, Warrington, and Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 873 births and 468 deaths were registered during the week ending Oct. 15th. The annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 13·0 to 14·4 per 1000, declined again to 12·9 in the week under notice. During the past summer quarter the death-rate in these towns averaged 12·9 per 1000, and exceeded by 1·1 the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged

from 9·8 and 10·6 in Aberdeen and Paisley to 14·9 in Greenock and 17·5 in Dundee. The 468 deaths from all causes in the eight towns last week showed a decline of 53 from the number in the previous week, and included 63 which were referred to the principal epidemic diseases, against 83 and 69 in the two preceding weeks; of these 63 deaths, 29 resulted from diarrhœa, 15 from diphtheria, 10 from whooping-cough, 4 from scarlet fever, 3 from measles, and 2 from "fever," but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·7 per 1000, the rate from the same diseases in the 77 English towns being 1·6 per 1000. The deaths attributed to diarrhœa in the Scotch towns, which had been 51 and 40 in the two previous weeks, further declined last week to 29; they included 19 in Glasgow, 6 in Dundee, and 2 in Greenock. The 15 fatal cases of diphtheria showed a further slight increase upon recent weekly numbers; 9 occurred in Glasgow and 4 in Perth. The 10 deaths from whooping-cough also showed a further increase, including 4 in Glasgow and 3 in Dundee. Two fatal cases of scarlet fever were returned in Glasgow, and 2 of measles in Edinburgh. The 2 deaths referred to "fever" included 1 each in Glasgow and Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 61 and 72 in the two preceding weeks, declined again to 69 in the week under notice, but exceeded by 11 the number in the corresponding week of last year. The causes of 14, or 3·0 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 545 births and 374 deaths were registered during the week ending Oct. 15th. The mean annual rate of mortality in these towns which had been equal to 17·8 and 15·9 per 1000 in the two preceding weeks, rose again to 16·9 in the week under notice. During the summer quarter the annual death-rate in these Irish towns averaged 16·3 per 1000; the mean rate during the same period did not exceed 11·8 in the 77 largest English towns and 12·9 in the eight principal Scotch towns. The annual death-rate during last week was equal to 18·9 in Dublin (against 12·8 in London), 16·3 in Belfast, 14·4 in Cork and in Londonderry, 15·0 in Limerick, and 21·4 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 15·8 per 1000. The 374 deaths from all causes in the 22 town districts last week showed an increase of 23 upon the number returned in the previous week, and included 31 which were referred to the principal epidemic diseases, a decline of 9 from the number in the previous week; these 31 deaths were equal to an annual rate of 1·4 per 1000, the rate from the same diseases last week in the 77 English towns being 1·6, and in the eight Scotch towns 1·7. The 31 deaths from these epidemic diseases in the Irish towns last week included 16 from diarrhœa, 5 from measles, 4 from whooping-cough, and 3 both from diphtheria and enteric fever, but not one from small-pox. The deaths attributed to diarrhœa, which had been 45, 43, and 28 in the three preceding weeks, further declined last week to 16, of which 9 occurred in Dublin, 3 in Belfast, and 2 in Waterford. The 5 fatal cases of measles included 3 in Belfast and 2 in Portadown. Two deaths from whooping-cough were returned in Dublin and 2 from diphtheria in Belfast. A death from enteric fever was recorded in Dublin, in Belfast, and in Cork. The deaths in the 22 towns last week included 66 which were referred to pneumonia and other diseases of the respiratory system, against 54 and 44 in the two previous weeks. The causes of 13, or 3·5 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·9 per cent., while in the Scotch towns it was equal to 3·0 per cent.

VITAL STATISTICS OF LONDON DURING SEPTEMBER, 1910.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·3 per 1000 of the population, estimated at 4,872,702 persons in the middle of the year. In the three preceding months the rates were 4·0, 4·1, and 3·9 per 1000 respectively. The lowest rates last month were recorded in Chelsea, the City of Westminster, Hampstead, Stoke Newington, Camberwell, and Lewisham; and the highest rates in Finsbury, Shoreditch, Bethnal Green, Poplar, Southwark, Bermondsey, and Woolwich. Scarlet fever, which had shown a decreased prevalence in the previous month, was more prevalent in September than in any other month of the current year; among the several boroughs the greatest proportional prevalence of this disease was recorded in Poplar, Southwark, Bermondsey, Lambeth, and Woolwich. The Metropolitan Asylums Hospitals contained 1630 scarlet fever patients at the end of last month, against 1358, 1530, and 1439 at the end of the three preceding months; the weekly admissions averaged 207, against 180, 190, and 160 in the three preceding months. Diphtheria also was more prevalent last month than in any previous month of this year; this disease was proportionally most prevalent in Fulham, Holborn, Finsbury, Southwark, Bermondsey, and Greenwich. There were 746 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 673, 613, and 580 at the end of the three preceding months; the weekly admissions averaged 108, against 80, 85, and 76 in the three preceding months. Enteric fever was much more prevalent than in any other recent month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Islington, Stoke Newington, Holborn, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 46, 45, and 58 at the end of the three preceding months, had risen to 141 at the end of last month; the weekly admissions averaged 32, against 8, 6, and 11 in the three preceding months. Erysipelas was proportionally most prevalent in the City of London, Finsbury, Bethnal Green, Stepney, Bermondsey, Battersea, and Deptford. The 28 cases of puerperal fever notified during the month included 3 in Fulham, 3 in Stepney, and 3 in Southwark, and 2 each in Paddington, St. Pancras, Poplar, Bermondsey, and Lambeth. Of the 11 cases notified as cerebro-spinal meningitis 3 belonged to St. Pancras, 2 to Hackney, and 2 to Bethnal Green.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates are further corrected for variations in the sex and age constitution of the populations. During the four weeks ending Oct. 1st the deaths of 4219 London residents were registered, equal to a corrected annual death-rate of 11·9 per 1000; in the three preceding months the rates were 10·6, 10·4, and 10·3 per 1000 respectively. The death-rates last month ranged from 8·0 in Hampstead, 8·5 in the City of Westminster and in Stoke Newington, 8·6 in Woolwich, 8·9 in St. Marylebone, and 9·1 in Lewisham, to 15·2 in Poplar, 15·8 in Holborn, 17·6 in Deptford, 18·4 in Shoreditch and in Bermondsey, and 19·2 in the City of London. The 4219 deaths from all causes included 550 which were referred to the principal infectious diseases; of these, 81 resulted from measles, 13 from scarlet fever, 34 from diphtheria, 48 from whooping-cough, 31 from enteric fever, 1 from ill-defined pyrexia, and 342 from diarrhœa, but not any from small-pox or from typhus fever. The lowest death-rates from these infectious diseases last month were recorded in Paddington, the City of Westminster, Hampstead, Stoke Newington, Wandsworth, and Woolwich; and the highest rates in Finsbury, Shoreditch, Poplar, Southwark, Bermondsey, and Deptford. The 81 fatal cases of measles were 39 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Chelsea, St. Pancras, Finsbury, Shoreditch, Southwark, Bermondsey, and Lambeth. The 13 deaths from scarlet fever showed a decline of 22 from the corrected average number; of these 13 deaths, 2 belonged to Poplar, 2 to Bermondsey, and 2 to Lambeth. The 34 fatal cases of diphtheria were 17 fewer than the corrected average

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING SEPTEMBER, 1910.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1910.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.		
LONDON	4,872,702	—	295	472	—	233	2	28	344	11	1985	5·3	—	81	13	34	48	--	31	1	342	550	1·5	4219	11·9
West Districts.																									
Paddington	153,004	—	17	7	—	6	—	2	11	—	43	3·7	—	—	—	—	1	—	—	—	2	3	0·3	105	9·5
Kensington	184,635	—	35	16	—	6	2	—	14	—	73	5·2	—	2	—	3	3	—	1	—	12	21	1·5	144	11·0
Hammersmith	127,413	—	26	8	—	2	—	—	5	—	41	4·2	—	—	—	—	2	—	—	—	5	7	0·7	103	10·9
Fulham	181,282	—	36	30	—	1	—	3	6	1	77	5·5	—	1	—	1	5	—	—	—	14	21	1·5	130	9·7
Chelsea	75,457	—	6	8	—	1	—	1	—	—	16	2·8	—	3	—	—	2	—	—	—	4	9	1·6	61	10·9
City of Westminster	167,233	—	15	9	—	6	—	1	6	—	37	2·9	—	2	—	—	—	—	—	—	2	4	0·3	97	8·5
North Districts.																									
St. Marylebone	125,196	—	16	11	—	5	—	—	13	—	45	4·7	—	—	1	1	1	—	1	—	3	7	0·7	81	8·9
Hampstead	95,729	—	13	4	—	2	—	—	—	—	19	2·6	—	—	—	1	1	—	—	—	1	3	0·4	52	8·0
St. Pancras	237,792	—	43	24	—	6	—	2	14	3	92	5·0	—	13	1	4	3	—	1	—	9	31	1·7	224	12·9
Islington	353,356	—	58	47	—	23	—	—	17	1	146	5·4	—	8	1	2	3	—	3	—	15	32	1·2	293	11·2
Stoke Newington	54,838	—	4	4	—	4	—	—	1	—	13	3·1	—	—	—	—	2	—	—	—	—	2	0·5	34	8·5
Hackney	239,979	—	30	12	—	7	—	1	17	2	69	3·7	—	—	—	—	1	—	1	—	11	13	0·7	186	10·5
Central Districts.																									
Holborn	53,142	—	7	8	—	5	—	—	2	—	22	5·4	—	1	—	—	—	—	1	—	1	3	0·7	60	15·8
Finsbury	94,578	—	17	22	—	2	—	—	16	—	57	7·9	—	3	—	3	1	—	—	1	8	16	2·2	100	14·3
City of London	17,132	—	1	1	—	2	—	—	3	—	7	5·3	—	—	—	—	—	—	—	—	1	1	0·8	23	19·2
East Districts.																									
Shoreditch	114,387	—	24	13	—	13	—	1	12	1	64	7·3	—	4	—	—	1	—	2	—	23	30	3·4	154	18·4
Bethnal Green	131,579	—	19	12	—	48	—	1	18	2	100	9·9	—	3	—	—	1	—	5	—	11	20	2·0	138	13·8
Stepney	314,379	—	45	20	—	27	—	3	37	—	132	5·5	—	3	—	1	—	—	4	—	37	45	1·9	344	14·9
Poplar	172,432	—	41	19	—	14	—	2	16	—	92	7·0	—	1	2	1	3	—	4	—	30	41	3·1	194	15·2
South Districts.																									
Southwark	211,832	—	52	39	—	5	—	3	21	—	120	7·4	—	8	1	6	2	--	—	—	25	42	2·6	213	13·7
Bermondsey	127,238	—	36	19	—	10	—	2	14	—	81	8·3	—	10	2	1	6	—	1	—	24	44	4·5	176	18·4
Lambeth	327,074	—	101	30	—	9	—	2	15	—	157	6·3	—	10	2	3	2	—	1	—	26	44	1·8	291	12·0
Battersea	188,222	—	24	13	—	2	—	1	23	—	63	4·4	—	—	—	1	1	—	—	—	13	15	1·0	138	10·3
Wandsworth	305,838	—	52	20	—	4	—	—	17	—	93	4·0	—	2	1	—	2	—	2	—	8	15	0·6	209	9·4
Camberwell	295,053	—	46	17	—	7	—	—	8	—	78	3·6	—	3	1	3	1	—	1	—	14	23	1·0	229	10·8
Deptford	119,642	—	22	12	—	6	—	1	16	—	57	6·2	—	2	—	—	—	—	3	—	21	26	2·8	153	17·6
Greenwich	112,935	—	8	29	—	6	—	1	5	1	50	5·8	—	1	—	1	1	—	—	—	14	17	2·0	94	11·0
Lewisham	164,899	—	30	6	—	2	—	—	8	—	46	3·6	—	—	1	2	3	—	—	—	6	12	0·9	110	9·1
Woolwich	135,422	—	71	12	—	2	—	1	9	—	95	9·1	—	1	—	—	—	—	—	—	2	3	0·3	83	8·6
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

number, and included 6 in Southwark, 4 in St. Pancras, and 3 each in Kensington, Finsbury, Lambeth, and Camberwell. The 48 deaths from whooping-cough showed a decline of 22 from the corrected average number; this disease showed the greatest proportional fatality in Fulham, Chelsea, Stoke Newington, and Bermondsey. The 31 fatal cases of enteric fever were eight in excess of the corrected average number; of these 31 deaths, 5 occurred in Bethnal Green, 4 in Stepney, 4 in Poplar, 3 in Islington, 3 in Deptford, 2 in Shoreditch, and 2 in Wandsworth. The 342 deaths from diarrhœa were less than one-half of the corrected average number; this disease was proportionally most fatal in Shoreditch, Stepney, Poplar, Southwark, Bermondsey, Deptford, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 40·6 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is notified:—Surgeon: C. D. Bell to the *Donegal*.

The undermentioned surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet:—William Bastian (dated August 2nd, 1908). Frank Elliott Bolton. Charles Joseph O'Connell (dated June 9th, 1910).

ROYAL ARMY MEDICAL CORPS.

The appointment of Surgeon-General J. G. MacNeece to be Principal Medical Officer of the Eighth (Lucknow) Division has been approved by His Majesty the King. Colonel T. J. R. Lucas has been transferred from Bangalore to Cherat. Colonel W. G. Macpherson, C.M.G., principal medical officer at Malta, has been appointed Principal Medical Officer of the Fourth (Quetta) Division, rendered vacant by the retirement of Colonel D. O'Sullivan. Lieutenant-Colonel J. J. Russell, from Limerick, has taken over the duties of Staff Officer to the Principal Medical Officer of the Southern Command. Lieutenant-Colonel T. W. O'H. Hamilton, C.M.G., staff officer to the principal medical officer of the Aldershot Command, has taken over medical charge of the military hospital at Warley from Major B. W. Longhurst, transferred to the Western Command. Lieutenant-Colonel M. O'D. Braddell, from Lahore, has been posted for duty at Rawalpindi. Lieutenant-Colonel R. H. Hall has proceeded on two months' leave from Colchester prior to embarkation as Senior Medical Officer, Bermuda. Lieutenant-Colonel J. Maher has been selected for increased rate of pay under the provisions of Article 317 of the Royal Warrant for promotion. Major E. A. Burnside, from Golden Hill has joined for duty at Tidworth Park. Major J. McD. McCarthy has been transferred from Chester to Chapel Bay Camp. Major S. J. C. P. Perry has taken over duty at Dover from Brighton. Major C. J. Healy has been transferred from Tipperary to Fermoy. Major C. E. P. Fowler, sanitary officer, Gibraltar, has arrived home on leave. An exchange on the roster for service abroad has been approved by the War Office between Major G. T. Rawnsley and Major G. B. Carter, serving in the Dublin District. Major W. Hallaran has embarked for a tour of service in India. Major C. K. Morgan has been appointed Instructor at the Royal Army Medical Corps School of Instruction, Aldershot. Major F. J. W. Porter, D.S.O., late senior medical officer on the West Coast of Africa (Sierra Leone), has taken up duty in the London District as Recruiting Medical Officer. Major W. E. Hudleston, from Gosport, has joined at Golden Hill. Captain H. R. Bateman, member of the Sleeping Sickness Commission, has returned home from Uganda. Captain J. S. Pascoe has embarked from Alexandria in the *Soudan* for home. Captain J. W. West, at present serving at Queenstown, has been placed under orders to embark for India for duty in the Northern Command, embarking about Nov. 4th next. Captain A. O. B. Wroughton, from Canterbury, has joined for duty at the Military Hospital, Dover. Captain J. F. Whelan, on completion of his course for promotion at the Royal Army Medical College, London, has been posted to Manchester. Captain E. S. Worthington, specialist in advanced operative surgery, has embarked for South Africa in the *Balmoral Castle* as Medical Officer in Charge of H.R.H. the Duke of Connaught. Captain C. A. J. A. Balck has been appointed Specialist in Charge of Physical Efficiency at the Curragh. Captain N. E. J. Harding has joined at Chatham. Captain G. A. Kempthorne has been transferred from Dalhousie to Amritsar. Lieutenant F. Worthington, Haulbowline, has embarked for a tour of duty in Ceylon. Lieutenant F. H. Somers-Gardner, from Rowlands Castle, has been posted to Hilsea.

INDIAN MEDICAL SERVICE.

Colonel R. W. S. Lyons, principal medical officer of the Kohat Brigade, has been granted three months' leave. Lieutenant-Colonel J. C. S. Vaughan, superintendent of the Campbell Medical School and Hospital at Calcutta, has been appointed Civil Surgeon and posted to Bhagalpur. Lieutenant-Colonel J. G. Jordan, Officiating Civil Surgeon of Darbhanga, has been granted six months' leave home from India. Lieutenant-Colonel C. M. Thompson has been appointed to officiate as Principal of the Medical College, Madras. Major S. A. Harris, Deputy Sanitary Commissioner of the United Provinces, has taken over the duties of Sanitary Commissioner of Burma during the absence, on 15 months' leave, of Major C. E. Williams. Major S. Browning Smith, plague medical officer of the Punjab, has been selected to officiate as Sanitary Commissioner of Eastern Bengal during the absence of Lieutenant-Colonel E. C. Hare. Major T. H. Symons has returned to India from leave. Major P. Carr-White, an agency surgeon of the Second Class, has been appointed Agency Surgeon in Kotah and Jhalawar. Major S. Hunt has been granted seven months' combined leave home from India. Major E. Wilkinson, Officiating Sanitary Commissioner of Eastern Bengal and Assam, has been appointed to officiate as Sanitary Commissioner of the Punjab, in place of Colonel C. J. Bamber, who has been appointed Inspector-General of Civil Hospitals, Punjab. The services of Captain W. J. Fraser have been placed temporarily at the disposal of the Honourable the Chief Commissioner of the Central Provinces. Captain E. C. Taylor has been appointed to officiate as an Agency Surgeon of the Second Class and has been posted as Civil Surgeon of Miranshah. The services of Captain J. B. Christian have been placed permanently at the disposal of the Government of Eastern Bengal and Assam. Captain A. Cameron has been posted for temporary plague duty in the Punjab. Captain L. J. M. Deas has been appointed to the medical charge of the Mewar Bhil Corps. Captain H. C. Keates, district plague medical officer, Gujranwala, has proceeded home on one year's furlough. Captain W. L. Trafford has been selected for duty under the Civil Medical Department of the United Provinces. Captain L. Reynolds has taken over duties as Principal as well as Medical Officer in charge of the Lawrence Military Asylum, Sanawar. Captain W. J. Fraser has been appointed Civil Surgeon at Chanda, Central Provinces. Captain N. S. Sodhi has joined for plague duty in the Punjab. Captain A. J. V. Betts has been appointed by H.E. the Governor of Bombay to act as Deputy Sanitary Commissioner of the Western Registration District, pending the arrival of Major J. H. Marjoribanks. Captain C. A. Gill has been selected to act as Chief Plague Medical Officer of the Punjab, vice Major Browning-Smith. Captain D. P. Goil has joined as Civil Surgeon of Rampore Boalia during the absence of Major A. Leventon on deputation.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps

The undermentioned Lieutenants are confirmed in their rank: William Darling and John M. Darling.

David Torquil Macleod Large to be Lieutenant (on probation) (dated Sept 23rd, 1910).

John Adams to be Lieutenant (on probation) (dated Sept. 19th, 1910).

TERRITORIAL FORCE.

East Riding of Yorkshire: Surgeon-Lieutenant Robert A. Draper to be Surgeon-Captain (dated Sept. 14th, 1906).

Royal Field Artillery.

1st West Riding Brigade: Surgeon-Captain John Nightingale to be Surgeon-Major (dated August 13th, 1910).

Royal Army Medical Corps.

For attachment to Units other than Medical Units.—William Murray to be Lieutenant (dated Sept. 15th, 1910). Leonard Colebrook to be Lieutenant (dated Oct. 3rd, 1910).

Attached to Units other than Medical Units.—Lieutenant Alexander T. Mulhall to be Captain (dated June 15th, 1910).

Surgeon-Major William Owen Evans, from the 2nd Volunteer Battalion, The Royal Welsh Fusiliers, to be Major, with precedence as in the Volunteer Force (dated April 1st, 1908).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Surgeon-Captain Sidney Hillier, from the 5th Battalion, The Suffolk Regiment, to be Surgeon-Captain, with precedence as in the Territorial Force (dated Oct. 15th, 1910).

TERRITORIAL OFFICERS DECORATION.

The King has conferred the Territorial Decoration upon the undermentioned officers of the Royal Army Medical Corps, Territorial Force, who have been duly recommended for the same under the terms of the Royal Warrant (dated August 17th, 1908):—Lieutenant-Colonel Thomas Horrocks Openshaw, C.M.G., attached to the Lincolnshire Yeomanry. Major William Crump Beatley, attached to the 6th Battalion, The Northumberland Fusiliers. Major John Tatham Thompson, attached to the 5th Battalion, The Welsh Regiment. Major George Williamson, attached to the 4th Battalion, The Gordon Highlanders. Major Duncan McMillan (deceased).

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Oct. 11th, Inspector-General W. H. Lloyd, R.N., in the chair, the sum of £50 was distributed among the several applicants.

The *Army and Navy Gazette* of Oct. 15th says: "With reference to some remarks made by Lord Grenfell in an opening speech at the presentation of prizes at the Middlesex Hospital on the 3rd inst. to the effect that during an epidemic of cholera in 1883 a certain amount of compulsion had to be used to get the medical officers of the army to visit the patients in the hospitals, we are authorised to state that the speaker referred to the old Egyptian Medical Department before its reorganisation by British medical officers."

ROYAL COLLEGE OF SURGEONS IN IRELAND: OPENING OF THE WINTER SESSION.—The winter session commenced on Oct. 15th, when the prizes won at the previous session were distributed by the President, Mr. Robert H. Woods, to the following gentlemen:—Barker Anatomical Prize (£26 5*s.*), T. Mather Thomson. Carmichael Scholarship (£15), M. J. Hillery. Mayne Scholarship (£8) J. S. Pegum. Gold Medals in Operative Surgery: J. S. Pegum and F. W. Warren (equal). Stoney Memorial Gold Medal in Anatomy: M. J. Hillery. Practical Histology: G. N. Smyth, first prize (£2) and medal; W. Morrow, second prize (£1) and certificate. Practical Chemistry: C. F. Coyne and M. J. Loftus (equal), first prize (£2) and medal. Public Health and Forensic Medicine: J. C. Sproule, first prize (£2) and medal; Vernon J. White, second prize (£1) and certificate. Materia Medica: M. J. Hillery, first prize (£2) and medal; Vernon J. White, second prize (£1) and certificate. Biology: L. S. O'Grady, first prize (£2) and medal; W. D. G. M'Call, second prize (£1) and certificate. Systematic Anatomy: D. J. Flanagan, first prize (£2) and medal; G. E. Pepper, second prize (£1) and certificate. Descriptive Anatomy: W. I. Adams, first prize (£2) and medal; D. J. Flanagan, second prize (£1) and certificate. Practical Anatomy: First year, W. Morrow, first prize (£2) and medal; R. A. Austin, second prize (£1) and certificate. Second year, J. C. Sproule, first prize (£2) and medal; W. I. Adams and G. E. Pepper (equal), second prize (£1) and certificate. Practice of Medicine: J. T. Duncan, first prize (£2) and medal; T. M. Thomson, second prize (£1) and certificate. Surgery: J. T. Duncan, first prize (£2) and medal; F. W. Warren, second prize (£1) and certificate. Midwifery: J. T. Duncan, first prize (£2) and medal; M. S. Moore, second prize (£1) and certificate. Physiology: J. D. Cherry, first prize (£2) and medal; A. F. Patterson, second prize (£1) and certificate. Chemistry: J. Lanigan, first prize (£2) and medal; L. E. Wigoder, second prize (£1) and certificate. Pathology: Vernon J. White, first prize (£2) and medal; T. T. Buckley, second prize (£1) and certificate. Physics: A. Merrin, first prize (£2) and medal; L. E. Wigoder, second prize (£1) and certificate.

Correspondence.

"Audi alteram partem."

THE MEANING OF THE AUDIBLE SIGNS IN MITRAL STENOSIS.

To the Editor of THE LANCET.

SIR,—Dr. Leonard Guthrie wields so graceful a rapier and lunges so chivalrously that one feels disposed to lower one's guard to experience the pleasure of being run through by so courteous an opponent! To do so would, however, not be regarded by him as a favour, and I therefore crave your permission to endeavour to parry his thrust by replying to some of the criticism in his letter to THE LANCET of Oct. 15th on my paper under the above title which appeared in your issue of Oct. 8th. That title speaks of the physical signs audible in mitral stenosis, but all of which are not necessarily indicative exclusively *of* that condition.

Dr. Guthrie selects for comment one of the most interesting of these signs—namely, the apical triple rhythm met with in some phases of the cardiac action in cases of mitral stenosis, but which, I entirely agree with him, is not *only* met with in such cases. Indeed, it may frequently be observed when there is no organic valvular disease whatever, as, for example, in the ventricular dilatation of the yielding "renal heart." I also agree with Dr. Guthrie that it may frequently be observed in early childhood in connexion with mitral regurgitant disease in which there is no suspicion of valvular stenosis. When, however, he places in the same category the significance of the "presystolic bruit," if by this he means a persistent presystolic bruit, I do not see eye to eye with him. Without reference to notes I cannot state the earliest age at which I have met with mitral stenosis. Rarely, if ever, I think, as early as the fifth or sixth year of life, but I have certainly, as I think he must also have done, observed it from time to time in children not much older. Nor can I recollect having noticed a true presystolic bruit in mitral regurgitation at any age. The virtual presystolic of an enlarged heart with stretched mitral curtains, which may be met with in aortic as well as in mitral cases, I do not include in this comment.

With reference to the exception which Dr. Guthrie takes to the term "reduplicated second sound," in so far as it applies to the apical triple rhythm I am again at one with him. If he will refer to my paper he will find that that expression, used in this connexion, was employed by the late Dr. Cheadle whom I quoted without sharing his views. In the text case of my paper the true second sound was reduplicated at the base, but was at no time so heard at the apex. This only leaves as a matter of contention between us the nature of the three components of the apical triple rhythm, which, we are agreed, can by no conception be regarded as the reduplicated second sound of the heart. We are agreed that the first of these three sounds is, to quote Dr. Guthrie, "the heart's first sound," and, he adds, "often accompanied by a systolic bruit." I agree that this is so, but not in mitral stenosis. In taking the view he does he agrees with the majority of those who have considered the subject, some of whom I quoted in my paper. The same difficulty, however, presents itself as in adopting my view—namely, that, of the admittedly reduplicated second sound at the base only one portion, one sound or note, reaches the apex, and of this I have suggested the only solution which occurs to me. The second sound of the triple rhythm or canter, I believe, moreover, occurs earlier than the true diastolic phase, which follows the third sound.

Dr. Guthrie considers this third sound to be a diastolic bruit, and emphasises the point by stating that it "is direct and not regurgitant." He no doubt means by this that the bruit is never aortic, for a direct diastolic bruit must of necessity be atrio-ventricular. I agree with him that the third sound may be blunted by bruit—was so in the text case of my paper; but I fail to see how, on the purely bruit hypothesis, tone, as distinct from murmur, is imparted to the third note in the canter. There are those, moreover, who are under the impression that the apical triple rhythm is at times associated with a palpable diastolic impulse or an impulse following that of the chief ventricular systole. Of

the existence of this, except as the extra-systole of an arrhythmia, I have never been able to convince myself. I confess, therefore, Sir, with every desire to give full weight to the objections urged against the explanation of this sign given in my paper by so skilled an observer as Dr. Leonard Guthrie, that I still venture to maintain the possibility of an audible yet unregistrable ventricular extra-systole constituting the second note in the apical triple rhythm.

I am, Sir, yours faithfully,

ALEXANDER MORISON.

Upper Berkeley-street, W., Oct. 16th, 1910.

OPERATIONS AND MORTALITY.

To the Editor of THE LANCET.

SIR,—A careful perusal of your leading article in THE LANCET of Oct. 15th leads to the conclusion that in your opinion under no circumstances is it advisable that an inquiry of any kind should be made after any fatal operation. You say, "There are ever those who are ready to cry unjustifiable when some new operation is proposed or performed." On Oct. 1st last, however, you also say in a leading article on Fashion in Surgery: "There is, however, no little risk that in becoming accustomed as we are to a rapid progress in our ideas and methods we may from time to time mistake mere change for progress, the mere introduction of a new method for true advancement, a chance which is certainly increased by the fact that many procedures in surgery hold a place in our technique for a very brief period." Now, I agree in its entirety with these remarks of yours, which you further illustrate by reference to Sir James Simpson's method of arresting hæmorrhage by acupuncture, which you rightly say is now "absolutely forgotten." You also mention Calot's method of forcible reduction of angular curvature of the spine, the wonders of which "were proclaimed in nearly every medical periodical," but you further say, "Where is Calot's method now?" "Dangers undreamed of, or unmentioned, at the time soon made their appearance." "A few sudden deaths occurred and the promised improvement in the power of walking never materialised."

I would respectfully ask you, Sir, Do you not think that, say, one or two inquiries into the cause of death in some of these fatal cases would have been proper and to the benefit of the public at large? Not with a view to casting obloquy on an honoured profession, but with a view to the safety of the public and to bring about a discontinuance of a dangerous, and even fatal, operation.

Again, you further on in the same article state that: "In even more recent times still we have had gastro-enterostomy put forward as a panacea for all the ills that the stomach is heir to; for pyloric stenosis, both functional and organic; for ulcer of the stomach and duodenum; for hæmatemesis; for dilatation of the stomach, both with and without pyloric stenosis; for malignant, as well as for simple, affections of the stomach." You then go on to say in most pregnant language: "Time, which tests all our inventions, has shown that this operation does not possess all the powers attributed to it, and at the present day probably the majority of surgeons will agree that gastro-enterostomy is seldom of permanent value unless there is definite obstruction at the pyloric opening." Surely, after this scathing criticism of the operation of gastro-enterostomy, even you would admit that there was at any rate *primâ facie* evidence that, in case of a fatal termination after this operation had been performed, say for gastric ulcer or spasmodic obstruction of the pylorus, there was a reasonable ground for an inquiry, even by a coroner's jury, and that no surgeon should undertake the operation unless he was quite prepared to face an inquest.

In your article of Oct. 15th you say: "Nothing would tend to stem the onward progress of surgery so much as to make a surgeon liable to have his work tried before a coroner's jury." From this proposition I entirely dissent, and to any careful reader of your article on "Fashion in Surgery," already alluded to, it must seem clear that some such controlling influence is required to prevent what we all know is so prevalent: that as soon as any surgeon introduces a new operation a host of imitators arise, and to the great disaster of progressive surgery numerous fatalities occur, due either to the initial unsoundness of the operation, or, in other cases, to the faulty technique of the unskilful imitator.

One more quotation from the same article. You say: "We cannot imagine a tribunal less fitted for deciding questions as to the desirability of an operation, or the capability of a surgeon, than a coroner's jury." In this you are at issue with most eminent members of the legal profession. Henry Edwin Fenn, senior reporter to the Law Courts, in his work on "Thirty-five Years in the Divorce Court," p. 208, says: "Juries are generally right, often more so indeed than judges and counsel, because they judge from a commonsense point of view." Sir Edward Carson, K.C., p. 213, said: "As a rule, juries return good verdicts. I should prefer a jury's verdict to that of a judge." Chief Justice Eve, p. 214, remarked: "A jury is in general far more likely to come to a right decision than a judge." Lord Halsbury says: "As a rule, juries are, in my opinion, more generally right than judges." Lord Russell of Killowen, p. 214, "held a very strong opinion on the value of a jury as judges of matter of fact. He always thought that the average opinion of twelve men of commonsense was at least equal to the judgment of twelve judges on matters of fact."

Provided you have no objection, Sir, I would respectfully ask you to state explicitly that under no circumstances do you consider it advisable that a fatal case after operation should be the subject of an inquiry? If you would not go so far as that, will you state under what circumstances you would consider an inquiry necessary? and, as you object to juries, what tribunal you would suggest as an equitable and proper one for the purpose? This question is coming rapidly to the front and the medical faculty may as well at once make up their minds to face it. Personally, my own opinion on the matter is simple. The present coroner's inquest is all that is needed: the ordinary jury is quite able to adjudicate on the matter. If no operation were undertaken, involving any particular risk, without a deliberate consultation beforehand, with one at least, but preferably two, experienced practitioners, no operator need fear an adverse verdict of the jury in case of a fatal termination. The coroner should have the power, after considering the details of the case furnished to him, to determine as to the advisability of holding an inquest or not. This would at once prevent the holding of needless and vexatious inquests. More than this, I am of the opinion that if the people at large knew that these precautions were taken, they would more cheerfully and voluntarily resign themselves to the surgeon's hands, confident that no merely experimental operations would be undertaken, but only such as were for the undoubted benefit of the patients themselves.

I am, Sir, yours faithfully,

Preston, Oct. 17th, 1910. JAMES A. RIGBY.

*** In the leading article of Oct. 15th we purposely alluded to the previous article of Oct. 1st. The disuse into which a new and wrong procedure falls is quite rapid, while the tendency of the compulsory inquest would be to prevent any new and right procedure ever being tried. Certainly we do not say that in no case would an inquest be justifiable where an operation had been fatal. Nor have we said that we "object to juries," but only that a coroner's jury is an unfit tribunal to sit in judgment upon surgical methods and results.—ED. L.

EFFICIENT VENTILATION.

To the Editor of THE LANCET.

SIR,—I am glad to see Dr. Leonard Hill drawing attention to the important fact first brought out by the classical experiments of Professor Flügge and his pupils Paul, Heymann, and Erckleutz,[1] by Dr. Haldane,[2] and confirmed by himself—namely, that the unpleasant sensation of "stuffiness" or "closeness" induced by air of an occupied room in which the ventilation is imperfect is due to heat retention. I should like to see our sanitary authorities making practical application of this discovery for the benefit of the public health, and apparatus recording the wet bulb temperature of the air in use in all theatres and public places of assembly, such apparatus submitted to regular inspection, and a fine imposed when the wet bulb temperature of the air during occupation exceeds the limit compatible with comfort and health. Why should one be incubated when at the theatre?

[1] Zeitschrift für Hygiene, Band xlix., 1905.
[2] Journal of Hygiene, 1905.

Further, I should like to see the London County Council compel tube railways to keep their air within this limit.

But important though the wet-bulb temperature of the air may be, it is by no means the only factor of importance from the point of view of health and comfort. On the other hand, when investigating the ventilation of the Debating Chamber of the House of Commons I found reason to suspect that much of the discomfort complained of under the old conditions was due, not to excess of wet bulb temperature, but to the air having been over-dried.

In addition to those qualities of the air that appeal more especially to the physiologist, I submit that the bacteriological quality of the air of occupied rooms is also of immense moment. In this sense (*pace* Dr. Hill) the chemical index of expired CO_2 is not necessarily an index of the degree of the important bacterial impurity, for bacteria are not given off from the upper respiratory passages in ordinary quiet breathing, but only in loud speaking, coughing, or sneezing. As most of the bacteria-laden droplets of mucus sprayed out in these acts—though they may be wafted by air currents to considerable distances (70 feet or more)—sink to the floor within 10 to 30 minutes, I see no reason theoretically why with a properly designed and efficiently maintained system of downward ventilation this natural gravitation of droplets should not be made use of and accelerated, and the spread of infection thus curtailed, even though an infectious person possibly be present.

I hope the time may come when the purity of the air in public places of assembly will be as carefully looked to by the public health authorities as, say, the purity of the public water-supply is at present, and I hail Judge Rentoul's decision as of good omen. But before the air in these places, or in ships, is as satisfactory as it ought to be, the architects and engineers who design and maintain the so-called systems of ventilation in use in them will have to be in closer touch with the practical teachings of modern physiology and bacteriology than they have shown evidence of having been in the past. It would appear that too much reliance has been placed on the arrow diagram and cast-iron formulæ, and that too little actual testing of these systems has been done with the anemometer, the smoke test, and—most important of all—the human subjective test.

I am, Sir, yours faithfully,

Harley-street, W., Oct. 17th, 1910. M. H. GORDON.

To the Editor of THE LANCET.

SIR,—Dr. Leonard Hill has written to express his entire dissent from a note published in THE LANCET on Oct. 8th relating to efficient ventilation at sea. He seems to me to have misunderstood the annotation and the best proof of this is that I find nothing in Dr. Leonard Hill's expression of dissent with which I do not agree, while I also agree with the author of the annotation in question. I quite understand that in a very hot, still, and damp temperature the quick movement of air produced by a mechanical fan would be a great relief, helping the circulation of the blood and generally raising the vitality of those concerned. But ventilation was the question at issue, and this is needed in all climates. When the weather is cold not only will fans be useless but the air admitted by the ventilator must travel very slowly, for if people feel a draught they will interfere with the system of ventilation. In pointing out that the public is apt to mistake the movement of the air produced by the rotation of a fan for ventilation, it is not necessary to urge that the use of fans should be abolished. Nevertheless it seems to me that fans have nothing to do with ventilation proper.

Further, Dr. Leonard Hill urges the importance of the bacteriological rather than the chemical test for purity of air and says the open-air man is most exempt from infection. With the mud adhering to our boots we may bring into dwellings or cabins many specific germs. The other day I was in a railway dining-car where the revolving fan above created gusts which blew the menu off the table. Surely it could likewise raise the dust and bacteria from off our boots to mix them with our food. This without ventilation might be dangerous. But the dust thus raised might be at the same time conveyed out into the open air by the steady current of a well-organised system of ventilation. Dr Leonard Hill insists on the benefit of open air, and I advocate here the necessity of efficient ventilation, so that we may have a sufficiency of open air indoors.

I am, Sir, yours faithfully,

London, Oct. 17th, 1910. ADOLPHE SMITH.

THE PROPERTY IN PRESCRIPTIONS.

To the Editor of THE LANCET.

SIR,—I have read with interest Dr. J. C. McWalter's letter in your issue of Oct. 15th, but he appears to be thinking of the law as perhaps it should be rather than as it actually is. There is nothing in English law to prevent a pharmacist selling a scheduled poison to any person who is known to him, whether such person has a medical prescription specifying it or not, although when supplying in accordance with a prescription the pharmacist is relieved from the necessity of observing certain statutory formalities which are otherwise incumbent upon him.

Again, a prescription, although generally written so that it can be compounded only by a trained pharmacist, is not usually addressed to any particular dispenser, and the fact that it has been presented for compounding to a pharmacist gives no kind of right to him to retain it. I submit that the pharmacist is an independent contractor. He is not in any sense an agent of the doctor, there being no privity of contract between them. Dr. McWalter's analogy with regard to his directions to a nurse hardly supports his contention. It is true that they were given at a certain time to a particular nurse concerning a specific patient in a known condition, but if repeated at other times for other persons, however unsuitably, I doubt if the learned doctor could obtain an injunction to, or in any other way restrain such unauthorised use of his skilled instructions.

I am, Sir, yours faithfully,

Middle Temple, Oct. 15th, 1910. H. WIPPELL GADD.

THE TREATMENT OF UTERINE FIBROIDS BY ELECTRICITY.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Oct 15th Dr. Agnes F. Savill reports in an interesting way a case of uterine fibroid treated by X rays. It seems to me that if this treatment is to last a year it can never compare favourably with Apostoli's method by the continuous current. Lately I have had a letter from one patient and seen two cases treated by me in 1889–90—20 years ago. In two the course lasted the usual time of three months; in the third, owing to special causes, for nearly twice that time. All were cases where the prominent symptom was hæmorrhage. The first, a lady 36 years of age, was perhaps the most anæmic person I have ever seen, and was doubtless too bloodless for operation; the second was under 30 years of age, and removal of the ovaries had been recommended; and the third declined operative measures. All have now finished with menstruation, have enjoyed good health for 20 years, and in all what was left of the tumours has given rise to no symptoms.

The operation of hysterectomy, formerly so dangerous, is now so safe that I consider operation as a rule the most satisfactory treatment, but occasionally there are cases where surgical treatment is not possible, as when a patient refuses, or when it is essential that the possibility of bearing children should not be lost. In such, Apostoli's method, provided the case is a suitable one, will compare favourably with any other form of non-surgical treatment.

I am, Sir, yours faithfully,

Oct. 17th, 1910. SKENE KEITH.

CÆSAREAN SECTION SUCCESSFULLY PERFORMED TWICE IN THE SAME PATIENT.

To the Editor of THE LANCET.

SIR,—Cæsarean section is not a very common operation, so that a case where a patient underwent the operation twice successfully may be worth recording.

A Chinese woman, aged 26 years, came to hospital in 1908 in the middle of the night in labour and eight months pregnant. I assisted Dr. W. V. M Koch (assistant superintendent) at the operation, when a dead fœtus was delivered. The woman made an uneventful recovery. In 1909 she returned four months

pregnant, when Dr. Koch dilated the os and emptied the uterus. In 1910 she returned eight months pregnant and in labour. I assisted Dr. W. B. A. Moore (assistant superintendent), who in addition to delivering a dead fœtus removed an inch of each tube. The woman recovered without a bad symptom. All diameters of the pelvis were uniformly contracted.—I am, Sir, yours faithfully,

J. BELL,
Superintendent of the Civil Hospital, Hong-Kong.

OPERATION FOR PROLAPSE OF THE RECTUM.

To the Editor of THE LANCET.

SIR,—With reference to an article by Mr. Leslie W. Dryland in your issue of Sept. 10th, p. 801, on prolapse of the rectum, and your annotation on the same, I write to state that I have performed a similar operation on two occasions.

The first was a middle-aged woman who had suffered from procidentia of the rectum for many years; it was about 6 inches long when fully down. After opening the abdomen in the left semilunar line I divided the peritoneum for about 2½ inches to the outer side of the left external iliac vessels and stripped up an outer flap of peritoneum to make a bed for the colon, removing the extra-peritoneal fat to allow the bowel to come into contact with the iliacus muscle. The edge of this flap was then stitched to a longitudinal band. This was about a year ago, and the result has been quite successful, the bowels acting normally and showing no tendency to prolapse.

Some time after performing this operation I came across a similar one described by Murphy in Kelly and Noble's "Operative Surgery," in which he speaks very highly of the procedure. Murphy makes a nest in the left iliac fossa for several inches of the bowel and stitches the peritoneal flap to the meso-sigmoid as well as to the bowel wall. The success attending the first case induced me to try it again a few months later in the case of a young woman, aged 30 years, who was three months pregnant. She had suffered terribly from the prolapse during her previous pregnancy and confinement and dreaded a repetition of it. At the time of my first seeing her the bowel always prolapsed several inches whenever she walked. A similar operation was performed and she went safely to term. During the latter months of her pregnancy there was a little prolapse of mucosa on defæcation, but if this persists it can be easily dealt with locally.

Colopexy in bad cases of prolapse is undoubtedly safer than amputation of the prolapsed bowel and appears to give quite as good results. Fixation of the bowel in the iliac fossa is unquestionably better than securing it to the anterior abdominal wall, the fixation being firmer, and there is no risk of leaving a weak scar, which is necessarily the case when the edges of the parietal peritoneum are not sutured together. I am, Sir, yours faithfully,

SIDNEY BOYD.
Chandos-street, Cavendish-square, W., Oct. 18th, 1910.

A REMARKABLE CASE OF INJURY TO THE EYE.

To the Editor of THE LANCET.

SIR,—The following account of an accident that is, I believe, unique in the history of the London and North-Western Railway Company, may be of sufficient general interest to make it worth recording.

On Sept. 22nd last an express engine-driver of the London and North-Western Railway Company came to my out-patient clinic at the Liverpool Eye and Ear Infirmary with the following story. Ten days previously he was driving the Irish Mail from Chester to Holyhead, and whilst running at a speed of 60 miles per hour down the line near Flint the window of the engine "cab" was struck by a thrush, which came through the thick plate-glass "like a bullet" and struck him in the left eye. He continued the journey to Holyhead, a distance of over 60 miles, and returned to Chester as a passenger by the next train, and had undergone some treatment at his home in that city.

I need not go into details as to the condition of the eye, but it is sufficient to say that there was a very small punctured wound in the sclerotic in the lower and outer quadrant of the eye and the whole eye was intensely inflamed. The man himself thought that this wound had been made by the bird's beak, but I strongly suspected a fragment of glass, which was not, however, proved by the X rays. The eye improved considerably under treatment, and I decided not to meddle with the wound in the hope that the small fragment of glass would be extruded. This duly happened, and a very small splinter of glass was found lying loose under the lower lid by my friend, Dr. Cyril Dobie of Chester, three days after the man left the hospital, this being the second occasion lately that I have known of a fragment of glass being extruded from the original wound by natural process.

I am told that a cracked window from the impact of a bird is not an uncommon accident to express engines, but that there is no previous instance on record of a bird coming bodily through the window, at any rate, in the history of the London and North-Western Railway. The thrush, which I suppose weighs about 4 ounces, must have been travelling at a good speed in the opposite direction, and they probably met at about 90 miles per hour. Needless to say, the thrush did not survive. I think the man's pluck in continuing the non-stop run to Holyhead is worthy of great commendation.

I am, Sir, yours faithfully,

EDGAR STEVENSON,
Honorary Surgeon, Liverpool Eye and Ear Infirmary.
Liverpool, Oct. 17th, 1910.

FIRST OPERATION UNDER ETHER IN EUROPE.

To the Editor of THE LANCET.

SIR,—I am collecting materials for a description of the first operation under ether in Europe, that performed by Robert Liston, Dec. 21st, 1846, and should be glad to hear from any surviving witness. At present Lord Lister is the only one known to me. The dresser, whose notes of the case are now before me, was Edward Palmer.

I am, Sir, yours faithfully,

F. WILLIAM COCK, M.D. Durh., F.S.A.
1, Porchester Houses, Porchester-square, W., Oct. 15th, 1910.

*** In the *Pharmaceutical Journal*, Vol. VI., No. 7, Jan. 1st, 1847, pp. 337–38, there is the record of two operations under ether by Mr. Liston at the North London Hospital on Friday, Dec. 18th, 1846. The first operation was that on Frederick Churchill, a patient with disease of the knee-joint, in which amputation was found necessary. The operation took place at 2 o'clock on Friday, Dec. 18th. The second operation was on an out-patient with a painful toe. This account was sent in by Mr. Ransome, the house surgeon of the North London Hospital. The medical staff at University College (or North London) Hospital at that time were Dr. C. J. B. Williams, Dr. A. T. Thomson, Dr. John Taylor, Dr. W. H. Walshe, Dr. E. W. Murphy, Mr. S. Cooper, Mr. Richard Quain, Mr. T. Morton, Mr. Durancé George, and Dr. Richard Quain. Surgical clinical lectures were given by Mr. Liston and Mr. Richard Quain.—ED. L.

THE QUESTION OF A COUNTERBLAST.

To the Editor of THE LANCET.

SIR,—Every member of the medical profession must receive a daily shock when he takes up his newspaper and searches for the news amongst the superabundance of quack medicine advertisements, each purporting to be an epoch-making discovery. To those whose sole literature is the newspaper such advertisements actually represent medical views. The readers believe that the statements therein made represent the progress of medical science. Surely some means can be adopted to enlighten these poor people who waste their money on quack remedies. It would be useless to attempt a crusade against these advertisements through the medium of the newspapers which publish them. Surely, however, we could reach a very large proportion of the population of our big cities by making use of the walls of the waiting-rooms of hospitals to issue a counterblast. Without mentioning any names, if this were thought inadvisable, a general warning could be posted up on these walls against the indiscriminate use of such medicines,

denying also any connexion between quack advertisements and the medical profession.

I am, Sir, yours faithfully,

County Hospital, Guildford, Oct. 15th, 1910. H. J. FARDON.

PARIS AND THE RAILWAY STRIKE.

(FROM A SPECIAL CORRESPONDENT.)

Paris during the Strike: The General Food-supply.—The Milk supply.—The Public Danger.

THE great five days' strike is now practically over as far as Paris is concerned, but it will be some days before the total extent of the damage caused can be estimated. Already the actual loss to commerce is calculated at 50 per cent. of the ordinary daily income, and it is expected that it will take at least a week before a normal rate of business can be carried on.

The General Food-supply.

Owing to the prompt measures taken by the Government as well as by private firms, the threatened danger of a shortage in the food-supply was averted from the first. Three-quarters of the provisions needed daily by the 2,270,000 people in the city comes by rail, but in the last 20 years the river service has increased enormously, as much as 600,000 tons of foodstuff being landed yearly on the Paris quays. The authorities had not waited for the strikers before establishing a plan of mobilisation of the Seine shipping. This, with the coöperation of carts bringing in the country produce and of orders forbidding the re-expedition to the provinces of cattle already in the stockyards at La Villette, put out of the question all cause for alarm on the score of famine.

The Prefecture of the Police requested M. Guichard, the Market Commissioner, to draw up a map of France indicating the points from which the chief supplies were obtained. This map enabled the authorities to direct their energies at once on the most important sources of supplies, and by Thursday night, Oct. 13th, within 48 hours of the commencement of the strike, a system of specially guarded food trains, as well as a boat service by river and canals, was in full working order. The strikers tried to incite to revolt the carters who bring the provisions from the stations to the market, but this attempt met with complete failure, some of the men being engaged for their military service (which seems to have a calming effect), and the others being accompanied on their wagons by an armed soldier.

Prices in consequence of these able measures for the most part remained normal, the only exceptions being butter, eggs, potatoes, and fish. The rise in eggs may be accounted for by the fact that the consignments usually coming in from the foreign markets are a little late this year. The rise in potatoes is attributed to the bad harvest, which has just induced the Government to allow the importation of American potatoes, which have hitherto been excluded from the French markets on account of their fear of the potato blight. The fish market was the only one seriously affected by the strike. On the 12th only 92,000 kilos from the Dutch, Belgian, and French ports arrived at Les Halles instead of the usual amount of 200,000 kilos, and this caused a rise in price of 20 per cent. The non-arrival was not entirely due to the lack of train service, for more than one car load arrived on Thursday at the Gare du Nord, but as no one was admitted to the platforms for fear of *sabotage*, the fish was allowed perforce to rot in the station. The bakers, who number 2200, declared that they had sufficient flour in stock to furnish their customers with bread for at least 11 days, and the supply of fresh fruit and vegetables was assured, to some extent at least, by the market carts which come in from the country every day.

The Milk-supply.

The chief fear was in regard to the milk in view of the dependence on it of the children and the sick. There was a considerable shortage on Wednesday and Thursday. Of the 870,000 litres of milk that come into Paris daily, about 200,000 litres are delivered at the Gare du Nord, and on Wednesday morning the dealers had to face a shortage of 90,000 litres. About 10,000 litres were brought into the city by a temporary cart service, and the Société Maggi made heroic efforts to supply its customers by means of relays of motor drays as well as a boat service. Some of the depôts of the Société Laitière Rothschild were obliged to refuse to sell to everyone, as they had only enough for families with children. At the hospitals Cochin and Lariboisière no inconvenience was felt, but the supply for the maternity hospital Baudelocque was not enough for its needs. There was considerable uneasiness on Wednesday at the different establishments of the Assistance Publique. At the Salpêtrière the daily distribution of 300 litres of milk was reduced to 150 litres. Many of these places, such as Berck, Angicourt, Saint-Firmin-Vineuil and Aulnay-les-Bondy, are provisioned from Paris, and the Assistance Publique was obliged to send 6000 kilos of victuals to the sanatorium of Angicourt by cart and supplies of coal to Brévannes by motor-dray. On the other hand, the directors were obliged to keep in Paris two convoys of sick children ready to be sent off to the sanatoriums of Berck and Romorantin, while it was equally impossible to despatch with their foster-mothers the little ones who were to be established in homes in the departments of the Nord, Pas de Calais, and La Somme.

Dr. Variot, the physician-in-chief of the "Hôpital des Enfants Assistés," in a letter written to the *Éclair* on the 14th expressed his alarm at the non-arrival of the specially prepared (*sur-chauffé*) milk which is sent from Normandy and sold at reduced prices for the benefit of the suffering poor. At the charitable organisation of the "Goutte de Lait de Belleville" they were obliged to send away 200 poor women who had come for the daily distribution of this milk, and the authorities are to be warmly congratulated on the prompt measures taken which caused this distressing state of things to last so short a time. By Saturday morning the milk was once more arriving in the ordinary quantities, though the customers in the Fifth and Sixth Arrondissements had to wait for their supply till 9 o'clock, as the supply had been sent *viâ* the Gare d'Austerlitz instead of the Gare de Vaugirard.

The Public Danger.

In view of the different attempts which were made to endanger the public safety, it is nothing less than marvellous that the escapes have been so many and the casualties so few. Law and order have had to reckon, among the strikers, with a group of irresponsible persons openly glorying in their schemes for endangering the lives of their fellows, and no amount of foresight can entirely cope with the power for harm of the man who fears no consequences. Wherever preventive measures were possible they were quickly taken, and it is largely due to the vigilance of M. Briand and M. Lepine that France has not had to deplore more than one hideous catastrophe. During the strike the many acts of *sabotage*, usually discovered only just in time to avert a terrible accident, have been duly noted in the press. It is, perhaps, not so well known that similar attempts were being made for some months before the strike was declared. Naturally the railway companies do not care to publish abroad the details, but from time to time some indiscreet journalist elicits such facts as the signal cutting at the station of Maison Alfort or the attempted train wrecking at Jonchery, near Chaumont, when the lights were put out and a beam was laid across the track. It is also a fact well known in railway circles that in the suburbs surrounding Paris the cutting of the wires which control the signals, or the points, or the telegraph is a matter of frequent, some say daily, occurrence.

The Government has taken extraordinary precautions from the beginning. Several battalions of soldiers were quickly marched into Paris to guard the railway stations, where the police might be seen loitering about the doors in groups of from 10 to 15. Military engineers were employed in the railway electric works, and detachments of soldiers were distributed along the tracks at regular intervals to guard against the train wreckers. The two big demonstrations of the strikers which took place in Paris were so well guarded that the list of casualties was small, and even the numerous cases where the workers have been assailed by the strikers have not had any serious consequences.

On the whole, Parisians have shown a wonderful amount of *sangfroid*—from M. Lepine, strolling into the office of *L'Humanité* and gracefully introducing M. Hamard with his warrant to arrest the assembled editors, down to the little *midinette* philosophically trading the five miles to her *atelier*. Save the timid souls who thronged the big grocery shops and

repeated their large orders of last January, everyone seemed to recognise that M. Briand has had a firm grasp of the situation from the very beginning.

There is not a little irony in the fact that it is the poorer classes who have been the chief sufferers from the strike. The total losses of the Gravelines fishermen amount to £2000, while the small dealers in Paris suffered considerably from the non-arrival of their wares. The cost of living in the city being prohibitive to many workpeople, a large number live in the suburbs and come in every day by train or tramway. The failure of the electric power made the latter unavailable on many lines, and though a service of vans was soon established many people preferred to walk long distances rather than subtract from their modest daily wage the franc demanded for the drive. At the time of writing more fiendish attempts at bomb-throwing are reported. The bombs aimed at the rich have done no damage beyond wrecking a few windows. The only victim is a poor street cleaner, peaceably doing his duty, whose eyes have been badly burnt by the explosion of a package which had evidently been thrown into the gutter by someone who thought himself pursued.

The history of last week's strike offers many unnoticed details of duty unobtrusively performed. These never get such big headlines as the achievements of the strikers. But pessimists would do well to remember such instances as the linesmen who stuck to their posts and industriously helped the military engineers to repair the acts of destruction, and the driver who stayed 20 hours on his engine in order to pick up and take on to Paris three extra car-loads of provisions which he found abandoned *en route* and which he succeeded in bringing into the city with only 25 minutes' delay. The soldiers contributed not a little to the good humour of the crowds filling the stations by the willing fashion they acted as amateur porters, while if the public are thankful the strike is over the police are no less content. In reply to an inquiry as to whether the trains were running on Saturday night the tall policeman answered, "Mais oui, mais oui, ça marche bien. Il n'y a que nous qui ne marche pas, parce que nous n'en pouvons plus."

Oct. 17th.

NINTH INTERNATIONAL CONFERENCE ON TUBERCULOSIS.

(FROM A SPECIAL CORRESPONDENT.)

THIS year the International Conference on Tuberculosis held its ninth series of sessions at Brussels between Oct. 5th and 8th, under the patronage of His Majesty King Albert of Belgium.

Permanent Commissions.

The first day, devoted to the meetings of the council, though it bulked but little in the public eye, was of importance in so far that a series of permanent commissions were then organised, some of them dealing with entirely new subjects, others continuing subjects already under consideration. The President, M. BOURGEOIS, suggested that these commissions should be made permanent and that they should be asked to report at the Conference to be held at Rome next year. Six of these commissions are to collect evidence on questions of a more or less scientific character, and six are to deal with social questions. In the first group are included such questions as predisposition; channels of infection; milk; methods of treatment, scientific and vaccinal; international methods of notation; and the curative action of the solar rays. In the second group we have the part played by women in the crusade against tuberculosis; child-life and school hygiene; prophylaxis and the part played by the dispensary; the cure of tuberculosis; the public measures to be taken against tuberculosis; and the statistics of tuberculosis. On these commissions are represented, as far as possible, the different nationalities taking part in the work of the Congress. In the evening a reception was given by the Governor of Brabant, M. Beco, who was acting as the President of the Committee of Organisation.

Formal Opening of the Conference.

On Thursday morning, the 6th, the formal opening of the Conference was under the presidency of M. BERRYER, Minister of the Interior, who compared the Tuberculosis Congress to the great Peace Congress at The Hague. Both, he said, were inspired by the same profound thought, and both wished to obtain the same results; in fact, one merged into the other, and the warring of man against man was being gradually replaced, thanks to a more humane sentiment, by a movement in which all men were combining in common action against the universal ills of vice, misery, disease, and death—a sentiment that was echoed most eloquently by M. BOURGEOIS.

Discussion on the Influence of Predisposition and Heredity.

Professor LANDOUZY, introducing the first subject for discussion, the Influence of Predisposition and Heredity, claimed that these were almost as important from the practical point of view as was the bacillus of Koch itself. He maintained that the bacillus tuberculosis in the parent might act in two ways, either by direct passage from the parent to the offspring or by some toxic action on the ovum or upon the fœtus. He pointed out that these two sets of conditions were necessarily perfectly distinct, but maintained that the latter was of far more importance than the former and that it accounted for the peculiar tuberculous diathesis so frequently met with in patients the subjects of tuberculosis. He maintained that they were degenerates who often came into the world before their time, were under weight, short in stature, with thin, delicate bones, flattened chests, a skin delicate and soft, small extremities, pale and sickly face, veins very transparent, hair prematurely developed, long eyelashes, glands easily enlarged, and aspect weakly. Such features he had found specially amongst his patients and, curiously enough, these patients, with their silky, golden, or red hair, their pale, transparent skin, finely spotted with freckles, reminded him of those beauties depicted by the painters of the Venetian School, for which reason he spoke of them as of the Venetian type, or *vir rufus*. Such patients, he thought, were specially subject to tuberculosis.

M. ARLOING (Lyons), following Professor Landouzy, agreed that tuberculosis itself was seldom communicated directly from mother to child, but that a certain functional debility might be transmitted, this leaving the child open to the invasion of various causes of disease and death. In this transmission the mother played a much more important part than did the father. He thought, however, that it would be a very difficult matter indeed to demonstrate experimentally any predisposition, native or hereditary, to tuberculosis, though he believed that the offspring of the tuberculous subjects were more susceptible than those born of normal persons. This, however, was a matter that required further consideration.

Dr. AUFRECHT, speaking of the natural portals of entry, maintained that the most important of these were undoubtedly the following: the mucous membranes of the throat, especially that of the tonsils, the intestinal mucous membrane, and the epidermis. He held that the lymphatic glands played a great part in sifting out and destroying the bacilli and that as these glands became lowered in vitality they might be broken down and become scrofulous. He seemed to lay special stress on the glands and the part they played in the tuberculous process.

Professor CALMETTE, in speaking of the special predisposition of children of tuberculous parents, said that this receptivity was not specific as regards tuberculosis but applied generally to various infections and intoxications. The predisposed of the clinicians he maintained were almost invariably the subjects of infection; they were, he thought, already more or less gravely affected, especially as regards the lymphatic glands and in almost all cases reacted positively to the various tuberculin tests. Again, he found that if in place of tuberculin he injected mallein into such patients he obtained a definite loss of weight, this showing that there was a general as well as a specific predisposition. The stigmata of tuberculosis appearing at certain ages were, he thought, the result of earlier infections. Indeed, he found that of children coming up to be vaccinated 90 per cent. of those from the town of Lille were already infected with the bacillus of tuberculosis, even in cases where no definite lesions were developed, whilst in one lunatic asylum he found no fewer than 87 68 per cent. of the patients giving the skin reaction, so that if they were not already tuberculous they were certainly the carriers of the germs of the disease.

M. C. GUÉRIN agreed that amongst animals those with non-pigmented coats appeared to be more susceptible or had

a greater predisposition to tuberculosis than those of darker skin.

Dr. NATHAN RAW placed on record the result of an analysis of 232 cases of tuberculosis that had terminated fatally and found that pulmonary tuberculosis was most frequently brought about, first by direct inhalation of the bacillus tuberculosis into the bronchioles; secondly, by extension from a bronchial gland to the parenchyma of the lung, this being specially associated with or following an attack of some acute infective fever, such as measles, scarlet fever, or diphtheria; by extension upwards from the abdomen, by the diaphragm to the bronchial glands and then to the lungs; by extension downwards from the glands of the neck directly to the pleura and then to the apex of the lung; and finally, by a general infection by the circulating blood, as in acute miliary tuberculosis.

M. ROBIN believed rather in a tissue or "organ" predisposition, though he agreed entirely with the signs of predisposition given by Professor Landouzy. He laid special stress on the marked respiratory changes that occurred not only in tuberculosis but in other acute diseases.

M. RENON, in connexion with these signs or "stigmata," wished to draw attention to the low arterial tension observed in those predisposed to tuberculosis. He also wished to point out that the question of pigmentation was of the greater importance from the fact, as had been pointed out, that in cases where recovery occurred pigmentation was both rapid and complete, whilst in those that succumbed such pigmentation did not occur at all readily.

M. PIERY agreed very largely with Professor Calmette that the offspring of tuberculous parents were undoubtedly specially liable to tuberculosis and that the types of the disease in these patients were very varied. He thought, however, that a certain proportion of such offspring were actually immune, and that though immune to a grave tuberculosis they nevertheless were just the types in which the so-called stigmata of hereditary predisposition were present. Moreover, he believed with Professor Calmette, that the patients supposed to have these stigmata of the hereditary susceptibility were already suffering from the disease.

There seemed to be, amongst the other speakers, a consensus of opinion that small numbers of non-virulent tubercle bacilli taken into the alimentary canal might in certain cases act as an immunising agent, but that in larger numbers and in virulent forms they might set up typical tuberculous lesions, especially in susceptible animals. In fact, it appeared to be the opinion of some of the speakers that both immunity and predisposition might arise from the same cause, that the bacilli might, in the one case, set up a kind of negative phase or predisposition, in the other a positive phase or immunity, and that until the conditions under which these occurred had been settled it was difficult to determine the part played by heredity.

Dr. C. THEODORE WILLIAMS insisted upon the importance of predisposition and on the wisdom of trying to ascertain the conditions of the human system which caused disposition to tubercle and, conversely, those which conferred immunity from tubercle. Analysing 1000 cases of consumption that occurred in the upper classes he found that the age of attack was earlier amongst females than amongst males, and that amongst males affected by hereditary predisposition it was earlier by three years than among those free from hereditary predisposition and in females by six and a half years. Further, on analysing 400 cases of consumption taken from the out-patients of the Brompton Hospital he found that his earlier conclusion as regards the age of attack being hastened on by family predisposition was confirmed, but here the relative influence on the two sexes differed greatly from what was noted in the richer classes. Among the out-patients the age of attack was about the same for males as for females, the males being attacked earlier than among the rich, the females later. The age of attack in those free from family taint was later in both sexes, and the predisposition influence greater in the male than in the female.

One or two of the later speakers were of opinion that although the points raised in this discussion were of undoubted interest, and of course of great importance to the individual, it was perhaps inadvisable to lay much stress on this question of predisposition, except in so far as it pointed to the importance of keeping these patients out of the range of the attack of the tubercle bacillus. It was useful, of course, in both prognosis and treatment. The real campaign, however, must be carried on, and on a large scale, against the tubercle bacillus and against the conditions under which it did its work most effectively. There seemed to be some danger that the bacillus might be overshadowed in the popular mind, and it appeared to some essential that it be insisted that although the tubercle bacillus does not always set up tuberculosis no tuberculosis is ever set up without the presence of the tubercle bacillus. Were heredity to be put forward too prominently those who are dealing with the question might lose heart. At the same time, should it play any part it should involve a call to the physician to look after the building up and strengthening of his patient.

Other Discussions.

The Friday morning sitting was devoted entirely to tuberculosis in the child and in the schools, and the afternoon sitting to women's work in connexion with tuberculosis. Mrs. NATHAN RAW and Dr. J. WALKER both took part in the discussion and stated the case for England. One of the most interesting contributions made in the afternoon was that by Dr. HERMANN VON SCHRÖTTER, who spoke of the action of sunlight and high altitudes and their relation to the treatment of tuberculosis. Some of his observations on the pigmentation of the skin seemed to bear out Professor Landouzy's thesis. Dr. Schrötter believed that the pigment was formed by the cell, that it did not come directly from the blood, and that the capacity to form pigment under stimulation gave some information as to the activity and stability of the cells. He also spoke of the effect of light, especially of the ultra-violet rays, and of high altitudes upon respiration, circulation, and metabolism. Not only was tuberculosis a disease of obscurity, it was also a disease of concentration of population.

Saturday morning was devoted to the nomination of committees and to reports by the delegates from the various countries represented; from which reports it may be gathered that not only in England, Ireland, and Scotland, but in many continental countries, especially Sweden, tuberculosis was gradually being driven out.

Social Functions.

The social functions held during the Conference were almost as interesting as the scientific sederunts. The reception given by the burgomaster and the town council of Brussels in the Hôtel de Ville was as interesting from the associations of the place as from the people one met there. The annual dinner was also a great success. Amongst the congratulations and messages sent to the Conference was one from King George, dated from Balmoral Castle: "The Queen joins me in thanking you and the members for your kind telegram. We earnestly pray that successful results may attend your labours, and that a further stimulus may be given to the great international campaign that is being carried out against this terrible disease.—GEORGE, R. et I." Telegrams were also received from the Emperor of Germany, the Queen of Denmark, the Kings of Roumania, Sweden, Spain, and Norway, and from President Taft, all of them expressing keen interest in the work of the Conference. Before and after the regular meetings of the Conference excursions were made to the various Belgian sanatoriums and to other institutions in which measures are being taken to prevent the spread of, or cure cases of, tuberculosis.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Strychnine Poisoning in Liverpool.

A PROLONGED investigation by the city coroner and a jury took place on Oct. 12th into the circumstances attending the death of a man, aged 58 years, who died at his residence in the city on Sept. 20th, and on whose remains a post-mortem examination, followed by analysis, had taken place. The widow said her husband had long suffered from an affection of the eye, to which he attributed severe pains in the head, but he had thought the pains arose from brain work. The deceased had had medical advice from time to time. Latterly he had been in the habit of going for medicine to the shop of a local chemist. On the Saturday previous to his death the deceased, after complaining of pains in the stomach, obtained a draught from the chemist, and said it gave him relief. He appeared well on the following Monday,

but on returning home about 6.30 P.M. on Tuesday, he said he had "had a shocking day with his head," and he had called on the chemist who supplied him with a draught. He sat down to tea, but was shortly afterwards heard to scream. His wife inquired what was amiss, and he replied, "What has come to my head and legs?" At the deceased's request his son went for the chemist, who administered an emetic, and as the deceased continued to struggle violently he went back to his shop and fetched something in a glass. On the chemist's advice a qualified medical practitioner was called in, and while he was fetching a stomach pump and an antidote to strychnine the deceased died. The chemist deposed that he had been in business for seven years. The deceased frequently visited his shop to have prescriptions made up, and as he continued of late to complain of pains in the head the witness advised him to again consult a medical man. The deceased, however, seemed satisfied with a weakened and varied form of his own medical man's prescription made up by the witness, which consisted of a draught containing 1-40th grain of strychnine. He also was supplied with tabloids or pills which contained strychnine. In one form or other the deceased had been taking strychnine regularly for several years. If the deceased died from strychnine poisoning he must have taken more than he obtained at the shop of the witness. The deceased could have his prescriptions, which he retained, made up elsewhere, and he might have taken, in order to relieve his pain, any number of the pills, which ought only to have been administered one at a time. Mr. W. C. Williams, city and county analyst, said that he found strychnine in the stomach and liver, while there were distinct traces of strychnine in the other parts of the body subjected to analysis. The bottle containing the remnant of the draught held less strychnine in solution than the prescription, but as the draught contained an alkali, the strychnine would be precipitated and crystallised, so that it would be impossible to secure the right amount of strychnine in each dose. Hence a prescription thus made up with an alkali was extremely dangerous. The amount of strychnine found in the body was consistent with strychnine poisoning. Mr. J. E. Stott agreed with the analyst, and said that the state of health of the deceased made him an unfit subject for a powerful dose of strychnine. The coroner said there was no doubt that the deceased died from strychnine poisoning, but in all the circumstances it would be well for the jury to confine their verdict to the simple fact of poisoning elicited from the medical man and the analyst. The coroner remarked that it was evidently necessary once more to warn both the public and chemists of the danger of administering potent drugs, save on the advice of a medical man who had diagnosed the individual case. He felt he could not do better than draw public attention to the words of Mr. Justice Kennedy, who had pointed out the tendency of the poor to make the druggist into a doctor, and he warned druggists to be extremely careful, as a public duty was cast on them in supplying dangerous drugs.

Yellow Fever on a Liverpool Liner: Two Deaths on Board.

Five cases of yellow fever occurred on a Liverpool liner, which arrived in Liverpool last week, between Brazil and Portugal. One passenger and one of the crew died and were buried at sea. One patient nearing convalescence was conveyed to a Liverpool hospital for detention.

The Care of Feeble-minded Children: West Derby Guardians' New Scheme.

The West Derby board of guardians has decided to embark upon a new scheme for making provision for feeble-minded children. At its meeting on Oct. 12th it was reported that a deputation had recently visited Birmingham, and had gained much valuable information from their inspection of institutions provided by the three Poor-law unions of that city for the care of mentally defective children. The deputation had been greatly impressed with the splendid arrangements made by the Birmingham Poor-law authorities for looking after this unfortunate class of people, and in the West Derby Union they had resolved to make a start on similar lines by adapting one of the cottages at the Fazakerley Cottage Homes to this purpose. Later it was hoped to extend the scheme by providing if possible an institution such as the colony they had seen at Birmingham for epileptics and the feeble-minded. This scheme was the most important that the West Derby board of guardians had yet taken in hand, and it was hoped that the committee would not be tied down to any hard-and-fast regulations, but before any serious expenditure was entered into the board would be made aware of it. The project was heartily endorsed by the board.

Public Hygiene in St. Helens.

At the meeting of the St. Helens health committee held on Oct. 12th the town clerk said that a clause was being put into the new Parliamentary Bill prohibiting spitting in the streets by any person suffering from pulmonary tuberculosis. The corporation had already power to make a by-law to the effect that "No person shall spit on the floor, side, or wall of any public carriage or of any public hall, public waiting-room, or place of public entertainment, whether admission thereto be obtained by payment or not, or in any enclosed or covered market." It would strengthen the hands of the committee if the clause were put in the Bill. The committee agreed thereto.

Oct. 17th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Report on Ptomaine Poisoning at Wrexham.

THE medical officer of health of the Wrexham urban and rural districts (Mr. D. Llewelyn Williams) has reported upon the cases of food poisoning which occurred in Wrexham and the adjoining district in August last. On the 6th and 7th day of that month about 100 persons were suddenly attacked with acute intestinal symptoms, including abdominal pain, vomiting, and diarrhœa, and in some cases there was collapse. Five of the patients died. It was ascertained that all those attacked had eaten a portion of pork pies purchased at one particular shop. Samples of these pies have been examined in the bacteriological laboratory of the Royal Institute of Public Health, and Professor W. R. Smith has reported that there was obtained from them by direct cultivation an organism which both from its varied cultural characteristics and its agglutination results was undoubtedly either the paratyphoid bacillus or the bacillus enteritidis of Gaertner. The same organism was also found in the viscera of one of the patients whose illness terminated fatally, and in the blood of three persons who were in close attendance on this patient and who were attacked with symptoms similar to those in the earlier cases. The organism was also found in the fæces of a man who worked in the shop in which the pies were made. A search for metallic substances in the pies gave negative result.

Cardiff Tuberculosis Dispensary.

A scheme for the voluntary notification of phthisis has been in force in Cardiff for some time, and efforts in other directions have been made to lessen the incidence of the disease. On Oct. 2nd there was opened a municipal dispensary for the treatment of tuberculous patients. It is situated in the basement of the City Hall, where there have been set aside a waiting-room, a consulting room, a weighing room, and a dispensing room. Already some 50 patients have attended, most of them being residents in Cardiff, but a few have come from the adjoining rural districts. The institution is open from 6 to 8 on the evenings of Monday, Wednesday, and Friday, and is under the charge of the assistant medical officer of health (Mr. E. Fairfield Thomas), who is assisted by a nurse who acts as dispenser. Every effort will be made to get in touch with the early cases of consumption through the corporation health visitors.

Open-air School in Monmouthshire.

Early in the present year the Monmouthshire education committee erected an open-air school with accommodation for 40 children at Aberbargoed in the Rhymney valley. It is situated on the side of the hill at an elevation of 700 feet above sea level. In the month of March children who were anæmic or debilitated and who were likely to benefit by the change were selected from the lower standards in the neighbouring schools. After attending the school for several months a marked change has been noticed in them, and the head teacher has reported that they now show an eagerness to join in games where hitherto they had preferred the shelter

of the school walls, and there is a gradual displacement of shyness or of indifference for a brighter and more cheerful countenance. The school curriculum has been modified so that the lessons are shorter, and rambles are taken for nature studies. Twice a day, at 11 A.M. and 3 P.M., there is an interval of five minutes when each child has a glass of milk, most of the parents contributing towards the expenditure involved.

Oct. 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

New Clinical Medicine Laboratory of Edinburgh Royal Infirmary.

ON Oct. 13th Sir Thomas Clifford Allbutt, Regius Professor of Medicine, University of Cambridge, formally opened the new laboratory of clinical medicine of the Royal Infirmary, Edinburgh. The ceremony took place in the large theatre of the infirmary. Professor Rankine, in the absence of the Lord Provost, presided. Those present included managers of the infirmary, the Principal and professors of the University, staff of the infirmary, and general public. At the outset Dr. George A. Gibson, with whom originated the idea, explained that through the extreme generosity of an anonymous donor a considerable sum of money had been placed at his disposal for the establishment of a fully equipped clinical laboratory, fitted with the latest apparatus for the study of the phenomena of the heart and circulation and for furnishing graphic records of these phenomena, and with the most recent appliances for the use of the X rays. In declaring the laboratory open, Sir Clifford Allbutt deprecated the tendency to dissociate pathology and clinical medicine, and welcomed such a laboratory as a step towards the integration of pathological research with clinical medicine. Pathology, speaking broadly, was merely one side of medicine, and nothing but evil and arrested progress could result from their separation. The pursuit of medicine, of all callings in life, was the most difficult. Medicine was not an exact science; our knowledge of it was constantly being added to, and the acquisition of this knowledge at all times presented very considerable difficulties, and new facts were only acquired gradually and laboriously. Such a laboratory as was now being added to the infirmary formed one of the means for acquiring such fresh knowledge, and so helped further to forward treatment and relieve suffering. The managers of the great hospitals in the kingdom, he felt sure, were beginning to see that many of these investigations which might seem to them fanciful or merely academic had enormously enlarged medical knowledge within the past few years. These investigations were not completed, but were constantly being added to, resulting in very great benefits to the sick with whom they had to deal. The apparatus that had been put down in the new laboratory recorded those electrical changes in muscle that were proving to be of the greatest importance in investigating the state of the heart. They had for the first time some definite means of ascertaining precisely the functional value of its muscle. After the opening ceremony the company proceeded to inspect the new laboratory. The infirmary managers have provided two rooms on the medical side of the infirmary and close to the medical wards, where patients can be readily conveyed for observation and treatment. In one room there has been installed a powerful apparatus for the screen examination by X rays of various internal diseases. It is so fitted up as to afford perfect security to the patient and observers from any injury by exposure to the rays, and has attached the most modern appliances for moving the patient into convenient positions for examination with the least possible discomfort. The other room contains various instruments for obtaining graphic records of the movements of the heart, a recording galvanometer that registers the electric currents produced by each beat of the heart, various forms of kymographs for the registration of pulsations and other movements which cannot be studied accurately except by graphic methods, and an instrument for the study of small changes in electric potential in living organs. There are also a number of appliances for the study of blood pressure. In addition, in the clinical medicine theatre, there has been fitted up an elaborate Leitz projection lantern for demonstrating microscopic specimens, solid objects, and diagrams, as well as ordinary lantern slides.

Edinburgh Royal Medical Society.

The 174th session of this society was opened on Oct. 15th by Sir Clifford Allbutt. He addressed the students on blood pressure and arterial disease. He first of all traced our knowledge of the subject from the introduction of instrumental means of investigation. He then discussed the production of arterial disease and its relationship to Bright's disease, pointing out the necessity for clearly distinguishing and separating the two. He showed how abnormal blood pressure in course of time, and as the result of peripheral constriction or resistance, produced definite and permanent changes in the arteries. Many other causes might have the same effect. But, on the other hand, elevated blood pressure did not necessarily follow arterial disease. Many cases of calcareous degeneration of arteries showed little or no elevation of blood pressure. Finally, he discussed the condition of elevated blood pressure, which he has called hyperpiesis, pointing out that it was permanently curable, but that it might and did recur, and if it recurred often or was untreated from the start it ultimately ended in arterio-sclerosis. Along with suitable dietetic restrictions he considered calomel the effective therapeutic measure for the treatment of the condition.

Death of Dr. D. H. Stirling, Perth.

Dr. David Halket Stirling, one of the oldest members of the medical profession in Perth, died on Oct. 14th, at his residence, Kinnoull Cottage, Perth. The deceased gentleman, who was in his eighty-first year, was born at Guildtoun, near Perth, and studied medicine at Edinburgh University and in Paris and Vienna. He started practice in Perth about 55 years ago. Dr. Stirling was very well known and highly respected by the citizens of Perth and district.

Aberdeen Parish Council Medical Officership.

The Aberdeen parish council met on Oct. 11th. The inspector said that there were no applications for the post of poorhouse visiting medical officer. In reference to the question asked at a previous meeting as to the power of the parish council to dismiss its resident medical officer, a telegram had been received from the Local Government Board. It said: "The poorhouse medical officer cannot be dismissed without the sanction of the Local Government Board." After much discussion it was finally decided to leave the question of the visiting medical officership to the next council. At the same meeting a letter was read from Dr. W. J. Byres, who recently held the office of poorhouse visiting medical officer, in which he complained of a remark made by one of the council at a previous meeting in reference to his report. The chairman pointed out that the rest of the council did not entertain the same views as the member who had made the remark, and the letter was allowed to lie on the table. A list of unvaccinated children was submitted, and the chairman stated that there were some 19 objectors who had not lodged objections with the registrars in time. The Local Government Board was anxious to prosecute in those cases. It was decided by 16 votes to 15 not to prosecute.

Honour to Professor Ogston.

The ceremony of presenting the portraits of Emeritus Professor Alexander Ogston took place in the Picture Gallery of Marischal College, Aberdeen, on the afternoon of Oct. 14th, one portrait being handed over to the University, the other being a gift to Professor Ogston's family. The ceremony was largely attended by the medical profession; there were also representatives of the Senatus and University Court and of the University, and many others. The portraits have been painted by Mr. Fiddes Watt, A.R.S.A. Professor Findlay presided, and said that when Professor Ogston retired from the chair of surgery last year it seemed to some of his old pupils and professional friends that it would be a fitting thing to promote a memorial of his long and distinguished career as a teacher of surgery, and accordingly, in May last, a committee was formed to carry out this object. The proposal was cordially responded to in all quarters. The Right Hon. Robert Farquharson of Finzean presented the first portrait to the University, and in the absence of Principal George Adam Smith, Professor Matthew Hay accepted it on behalf of the University, in the course of his remarks saying that no one had done more than Professor

Ogston to increase the educational efficiency of the University and to advance its reputation throughout the world. "We are all of us—teacher, graduate, and student alike—proud of Professor Ogston. He is one of our own, the son of a distinguished professor of this University, a brilliant student in its medical faculty, and, finally, the eminent occupant of its chair of surgery." Dr. Farquharson afterwards presented Professor Ogston with the second portrait. Professor Ogston, in the course of his reply, stated how highly he valued the appreciation of his colleagues and pupils. He had been given a place in the Pantheon of the University, which, however little he might deserve, he most deeply appreciated. He remarked upon his close connexion with the University, for at the house which stood where the chemistry laboratory of the University now stands, his first lessons in walking were obtained in the quadrangle of Marischal College. Graduating in medicine and surgery when two days under age, he began at the age of 22 the connexion with the medical school which had not hitherto been interrupted, unless interrupted now. "All that I have I owe to the College and the University, and no one can wonder that my love for it should be so deep, and hence the value of what you have conferred upon me must be tenfold greater than it otherwise would have been." Professor J. Marnoch proposed a vote of thanks to the committee and to Dr. J. Mackenzie Booth, who had spared no effort to achieve success. Dr. Mackenzie Booth replied, and intimated that a photogravure of the University portrait was being prepared and was to be sent, with a *résumé* of the proceedings on this occasion and a list of subscribers, to all those who contributed to the testimonial. He added that a considerable surplus of money was to be handed to the University to provide an annual prize of instruments for the best student in the senior section of the surgery class, to perpetuate Professor Ogston's memory in future generations of the students of his Alma Mater.

Royal Aberdeen Hospital for Sick Children.

A special appeal has been issued by the directors of this hospital for funds to provide a larger building on a new site. The new building will require to contain at the very least 100 beds, and it is estimated that the erection of such a building, capable of ready extension for future requirements, on a suitable site will cost from £30,000 to £35,000. Her Majesty the Queen has been graciously pleased to become patroness of the institution, and it is considered that the new hospital building will form an appropriate and fitting memorial to the late King.

Oct. 16th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Ireland.

Dr. J. Hawtrey Benson has been elected President of the College for the ensuing year.

Royal Academy of Medicine in Ireland.

The annual meeting of the Royal Academy of Medicine in Ireland was held on Oct. 14th at the Royal College of Physicians. The report stated that the number of Fellows was 184, of Members 22, and of Associates 9. The credit balance at the bank was £255 9*s.* 7*d.* The annual elections were held, special interest being taken in the election for the general secretaryship consequent on the resignation of Dr. James Craig. No less than six candidates offered themselves, of whom Professor J. A. Scott was elected. The other elections resulted as follows:—Secretary for Foreign Correspondence: Sir John Moore. Medical Section: President, Sir John Moore. Surgical Section: President, Mr. R. H. Woods, P.R.C.S.I. Obstetrical Section: President, Dr. H. Jellett. Pathological Section: President, Dr. A. H. Benson. Section of Anatomy and Physiology: President, Dr. E. P. McLoughlin. Section of State Medicine: President, Dr. E. J. McWeeney. A resolution was adopted that a quinquennial enumeration of the population is most desirable, and recommending the Academy to make representations to this effect "to the Government, and to invite the assistance of the Irish Universities, the Royal Colleges, the Irish Medical Association, and such bodies as the Royal Dublin Society and the Dublin Sanitary Association in attempting to attain so important an object."

Memorial to Dr. Conolly Norman.

Last Tuesday being St. Luke's Day the memorial tablet to the late Dr. Conolly Norman erected in St. Patrick's Cathedral was unveiled by His Excellency the Lord Lieutenant. The memorial, which is erected in the north choir aisle, consists of a bronze relief portrait of Dr. Norman by Mr. J. M. Carré, set in a niche of Bath stone designed by the late Sir Thomas Drew. The plaque is surmounted by a heraldic device in bronze, also by Mr. Carré; while the lower panel of the niche contains a bronze plate bearing the inscription. Later in the afternoon of the same day a deputation of the subscribers presented to the Royal College of Physicians a portrait in oils of Dr. Norman.

Opening of New Dispensaries at Jervis-street Hospital.

Lord Aberdeen attended at Jervis-street Hospital last Monday to declare the new dispensaries open. The Charitable Infirmary, Jervis-street, is the oldest of the general hospitals of Dublin. For some years the out-patient rooms, which were then situated in the basement, were recognised to be inadequate, and the managing committee at length found itself able to undertake rebuilding, with the result that a fine suite has been erected consisting of large, airy reception-rooms for medical and surgical cases and a number of smaller rooms for dealing with special conditions. Some of the funds have been provided by the Pembroke Charities Trustees, but the remainder is still to seek.

Accident to Mr. R. L. Swan.

A serious accident occurred last Saturday to Mr. R. L. Swan, surgeon to Dr. Steevens' Hospital, and ex-President of the Royal College of Surgeons in Ireland. While cycling in the streets of Dublin he fell off his machine, and the wheel of a van went over his chest, breaking three ribs. His many friends will hear with pleasure that his progress has been satisfactory.

Irish County Asylums and the Reduced Grants.

The greatest dissatisfaction has arisen throughout Ireland in regard to the reduced Treasury capitation grants to the county asylums. For instance, in County Cavan the deficit, as compared with the estimate, is £1631 13*s.* 9*d.*; in County Monaghan, the deficit is £1360 2*s.* 9*d.*; in County Sligo, the deficit is £1187 5*s.*; and £996 10*s.* 2*d.* in County Leitrim. In County Tyrone the reduction is £1728; in County Derry, £1100; and in County Fermanagh it is £770 0*s.* 8*d.* It would appear that in the past the Treasury has given a capitation grant of 4*s* per week to Irish asylums, which was met by an Imperial grant of £79,000 per annum, together with licence duties—not whisky duties. It is strange there is no reduction in this grant towards England and Scotland. It would seem the grant in Ireland has been reduced on account of the increased expenditure in asylums which the county councils made on the faith of getting this capitation allowance. The inadequacy of local taxation to meet its liabilities is said to be due to causes over which the local authorities have no control, such as (1) increase of lunacy, (2) falling-off of revenues from sources of income on that account; (3) a large portion of expenditure on asylums is under the head of repayment of loans which were borrowed under the direction of the Board of Control with the consent of the local authorities; (4) increased cost of upkeep through general rise of market prices; and (5) most of the inmates of asylums are dangerous lunatics committed by magistrates whose admission is as compulsory on committees of lunatic asylums as on governors of jails. Very strong resolutions are being passed by the asylum boards all over Ireland, protesting against this action of the Treasury, which the Chief Secretary will have to explain when Parliament opens. It is said the deficit in Belfast will be £2000, and that there will this year be entailed on the ratepayers of Ireland a burden which is estimated as £62,000 in consequence of the falling short of what is known as the local taxation account—that is to say, the proceeds of licences and of the liquor duties—upon which the charges to pay on each patient in Irish asylums one-half the cost of maintenance, or 4*s.* in the £, were laid. Under the Local Government Act, not only this capitation grant but half the salaries of medical officers and certain other local grants were charged upon the local taxation fund derived from licences and from liquor taxes. It is clear some arrangement should have been made to anticipate this shrinkage of

revenue. The Chief Secretary is to meet a deputation on Oct. 24th in reference to the matter.

The King Edward VII. Memorial in Belfast.

The sum now subscribed for the King Edward VII. Memorial (which is to take the form of an additional block to the Royal Victoria Hospital) amounts to £13,046.

Oct. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Congress of Surgery.

THE first subject of discussion at the recent Congress of Surgery was the Surgical Treatment of Exophthalmic Goitre. It was introduced by M. Delore, who dealt chiefly with the various methods of operating, and by M. Lenormand, who described the indications for surgical treatment and the results that had been obtained. Sir Victor Horsley explained the views of English surgeons on several points of the question. He said that in the majority of cases medical treatment was insufficient. When a patient had been under observation for six weeks, and had undergone medical treatment without benefit, an operation might be undertaken. M. Forgue of Montpellier said that in his opinion an operation ought not to be too long delayed. M. Girard of Geneva spoke only on the application of thyroid ligatures previous to a more extensive operation. M. Ceci of Pisa advocated local anæsthesia in operations on the thyroid gland. The subsequent speakers were M. Tavel, M. Doyen, M. Jonnesco, M. Alessandri, M. Morestin, M. Bérard, and M. Van Stockum, the latter of whom was emphatic as to the danger of general anæsthesia, and said that he always preferred local anæsthesia in these operations. M. Broeckaert of Gand said that in Belgium operations for exophthalmic goitre were not common. M. Lucas-Championnière spoke of cerebral decompression by opening the cranium. He said that his numerous operations had led him to think that this valuable procedure had not been sufficiently taken advantage of. The operation which he performed was a very simple one and not serious; it consisted in trephining, enlarging the aperture with a gouge, and incising the dura mater. M. Girard described the operative treatment of serous meningitis. The next subject of discussion was the Surgical Treatment of Duodenal Ulcer. It was introduced by M. Ricard and M. Pauchet, who confined their remarks to the primary ulcer of the duodenum, which was the classic form of the disease, whereas the secondary ulcer presented no clinical interest. The diagnostic points were the pain and the previous history of the illness. The most frequent complication was perforation, which might be either acute, subacute, or chronic. The treatment of perforation consisted in lateral laparotomy and suture of the ulcer in two layers with drainage of the subhepatic space and the pouch of Douglas. An operation was the only efficacious treatment of duodenal ulcer, gastro-enterostomy being the most advisable procedure. M. Ricard and M. Pauchet concluded by saying that the French statistics of these operations did not show brilliant results, probably because the operators have not had much experience of duodenal surgery. M. Tédenat, M. Hartmann, M. Jonnesco, M. Delaunay, M. Lardennois, M. Monprofit, and M. Boeckel explained their views and mentioned the results of their operations. M. Jeannel introduced a discussion on the Immediate and Remote Effects of Cutting Operations in the Treatment of Varix of the Lower Limb, and the topic was continued by M. Mauclaire, who described the treatment of the principal complications of varix—namely, varicose ulcers, phlebitis, and rupture of the enlarged veins. M. Ceci, M. Willems Boeckel, M. Villar, M. Tavel, M. Bérard, M. Alessandri, M. Reymond, M. Sabadini, M. Lardennois, M. Paul Delbet, M. Viannay, M. Rémy, M. Durand, and M. Poussié also took part in the discussion.

Poisoning by Decoction of Poppy-heads.

At a meeting of the Society of Legal Medicine held on Oct. 10th Dr. Dutilleul and M. Bonn, a chemist, presented a communication in which they stated that the employment of a decoction of poppy-heads was very common in the north of France and that death was unfortunately sometimes due to this cause. They reported a case occurring in the vicinity of Lille in which an infant aged 4 months had in the course of eight days taken an infusion of three poppy-heads in a litre of water. The child died and the necropsy showed several of the ordinary indications of opium poisoning but no evidence of organic disease to which the fatal issue might be attributed. On analysis the viscera were found to contain a dangerously large amount of alkaloid. In view of the risks attendant on this method of treatment Dr. Dutilleul and M. Bonn expressed surprise that poppy-heads should be freely sold not only by druggists but even herbalists and grocers, and they recommended the introduction of restrictions.

Treatment of Tuberculosis on the Mediterranean Coast.

At a meeting of the Academy of Medicine, held on Oct. 11th, M. Debove read a report on a communication by M. Révillet showing the results of the treatment of infantile tuberculosis in the Dollfuss Sanatorium at Cannes on the Mediterranean. In this institution children from Geneva suffering from tuberculous disease of the bones, joints, and glands are received during winter. Before leaving Switzerland they are examined by a commission of which M. d'Espine is the president, and they are again examined on their return. The commission has found that excellent results have been obtained from the treatment which includes daily sea-bathing and heliotherapy.

Granular Conjunctivitis.

An epidemic of granular conjunctivitis which has prevailed for some months in a certain *quartier* of Paris is an obvious danger to the public health. This condition, although extremely contagious and difficult to treat, is not included among the diseases notification of which is compulsory. The municipal councillors of several arrondissements of Paris recognise that the matter is serious and will question the prefect of police on the subject. Dr. Dubief, principal inspector of epidemic diseases in the department of the Seine, is also announced to present a report on the circumstances. The majority of the patients are Jews and Armenians coming from Syria, Judea, and Egypt. Deportation of the patients would be the most efficacious measure but would be rather troublesome, as they are from 250 to 300 in number, and it would also be necessary to prevent them from returning. In this difficulty the best courses would be (1) to compel all patients of foreign origin and under the supervision of the police to undergo regular treatment under pain of deportation, and (2) to prevent the spread of the contagion by giving some instruction in hygiene to all the French people who are brought into contact with the patients through being employed in the lodging-houses where they live.

Oct. 18th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS)

Malaria Prevention in the United Provinces.

DURING the course of last year instructions were issued from the office of the Sanitary Commissioner, United Provinces, to the municipal boards through commissioners of divisions regarding the treatment of tanks and other water surfaces with kerosine oil with a view to the reduction of malaria. These instructions have been carried out in several localities, while in certain others surface drainage has recently been improved and insanitary pits and hollows have been filled up with a view of diminishing the breeding places of mosquitoes. Quinine has also been distributed gratuitously in many districts. As the fish known as "millions" are reported to be very voracious and to feed on the eggs, larvæ and pupæ of mosquitoes to such an extent as to render it impossible for these latter to breed in the waters frequented by the fish, a supply of them was obtained in November last from England through the kindness of Lieutenant-Colonel J. J. Pratt, I.M.S., and Major W. Selby, I.M.S. They are for the present being kept in the Zoological Gardens, Calcutta, and are to be experimented with as soon as they have increased to sufficient numbers.

Beri-beri and Rice.

The conclusions now so generally accepted that beri-beri is a disorder of nutrition associated usually with a diet of which white, or "over-milled," rice is the principal constituent will probably have an important effect on the rice

trade, and rice millers will have to modify certain of their processes. According to a letter from the Government of Burma to the Burma Chamber of Commerce, the Hong-Kong administration is to consider measures for the exclusion of polished rice from their territories, and it is not unlikely that other governments will be inclined to a similar policy. The Burma Chamber of Commerce is making inquiries on the subject, so that rice millers may be warned to take steps in time to prevent the large rice export trade of the province being injured.

A Pasteur Institute for Bombay.

The Government of Bombay in a note to the municipal Commissioners and the chairman of the Bombay Port Trust, in favour of the establishment of a Pasteur Institute in Bombay, to be located at Parel, states that the cost of such institute would be a legitimate charge to municipal revenues. As, however, the Parel Laboratory as a Government institution affords facilities for the establishment of the proposed branch on an economical scale, and as it would be for the treatment of patients coming from outside of Bombay, it is thought that it would be inequitable to expect the municipality to meet the whole of the expenditure incurred at Parel. The services of the superior medical staff already employed and trained at the laboratory will be available for bacteriological and other work in connexion with the antirabic treatment, thus effecting considerable reduction in the expenses of the institute. The services of the clerical and other establishments at the laboratory will also be utilised without much extra cost for the work of the proposed branch. It is estimated that the maintenance of the branch institute in conjunction with the Parel Laboratory will cost from a minimum of Rs. 16,000 to a maximum of Rs. 31,000 a year, according to the grade of medical staff employed. The average may be taken as about Rs. 20,000 a year. The government proposes to lay the scheme before other local bodies in Bombay and the Mofussil, and the benevolent public will also be asked to subscribe.

The National Medical College of India.

In response to invitations issued by the President of the Board of Governors of the National Medical College of India to meet Sir Lawrence Jenkins, Chief Justice of Bengal, a large and representative gathering assembled at the College Hall, Calcutta, recently. Sir Lawrence Jenkins, on arrival, inspected the college and hospital attached to the institution, and was favourably impressed by all he saw. The superintendent of the college then read an address of welcome to the Chief Justice, in the course of which he said that the college was intended to be an auxiliary to official colleges. He said that a late Lieutenant-Governor, referring to the institution, stated he was very strongly in favour of a medical institution apart from the official medical college. Sir Lawrence Jenkins was convinced a separate non-official medical institution will lead to much better organisation of medical teaching in Calcutta. Their efforts had not been fruitless; their scholars hailed from all parts of India. Students were carrying out a noble mission, for they go right into the interior and carry into remote Mofussil villages the blessings of modern science. Their professors were men who have had a brilliant training in Europe under teachers of world-wide fame. The locally educated professors were also men of high attainments, with special knowledge in their respective departments. All of them are giving their gratuitous services to the institution, receiving nothing more than mere *gharri* (carriage) hire. The school attached to the college was making itself greatly useful. The out-door department gave relief to about 20,000 patients yearly. The indoor department was very much in need of additional accommodation. Pressure on the beds had been so great that they had been obliged to refuse many applications for admission. They were also endeavouring to revive the ancient Ayurvedic system of medicine on a modern basis by infusing into it the elements of modern scientific treatment. An address was then presented to the Maharaja of Cossimbazar for his interest in all movements and objects for the well-being of the citizens. A suitable reply was made. Sir Lawrence Jenkins next announced that the Maharaja of Cossimbazar had promised a donation of Rs. 6000 and the Maharaja of Darbhanga Rs. 2000 towards the erection of a suitable building for the college.

The St. John Ambulance Association.

An account of the proceedings at the annual meeting in Simla of the Indian branch of the St. John Ambulance Association has just been issued. The report presented to the meeting by the honorary secretary, Major R. J. Blackham, R.A.M.C., bears witness to the phenomenal progress made by the branch during the past year. In March of the previous year there were, even on paper, but nine centres of the association. Now there are seven strong provincial and six State centres, besides various district centres, a Bengal coalfields centre, and centres on nearly all the chief Indian railways. In almost every direction, and especially on the railways, due in this case largely to the great interest displayed in the work of the association by Sir Trevredyn Wynne, chairman of the Railway Board, Major Blackham finds cause for much congratulation at the record of progress made. In fact, to quote his own words, "The work of the Association is now being carried on enthusiastically in all parts of this vast Empire, and there is every reason to hope that in a very few years there will hardly be a hamlet from Jamrud to Trichinopoly, and from Bombay to Bhamo, where its courses of instruction will not be known and appreciated."

Sept. 15th.

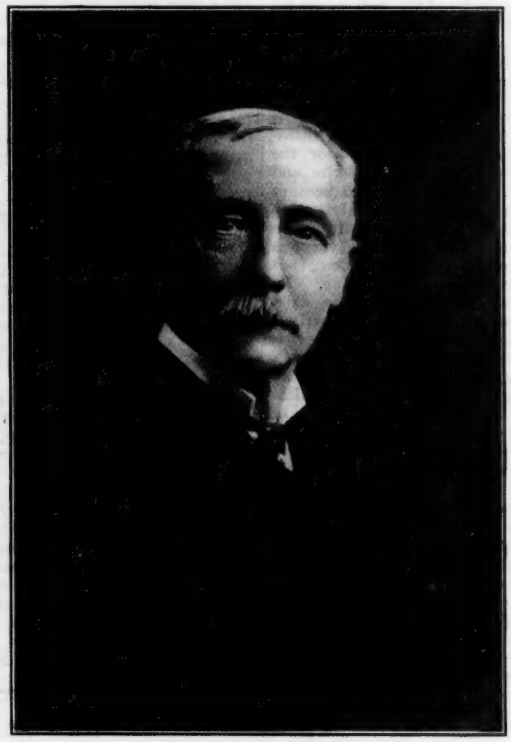
AUSTRALASIAN MEDICAL CONGRESS.—The ninth session of this Congress will be held in Sydney during September, 1911, under the Presidency of Mr. F. Antill Pockley. The session will commence on Monday, Sept. 18th, and end on Saturday, Sept. 23rd. The Senate of the University of Sydney has kindly granted the use of its buildings and grounds, and the Government of New South Wales has given its countenance and support to the Congress. The following are officers of Congress:—President: Dr. F. Antill Pockley. Treasurer: Dr. S. H. MacCulloch. General Secretary: Dr. Arthur Palmer. Associate Secretary: Mr. A. J. Brady. The following are Vice-Presidents: Dr. J. C. Verco, Sir P. Sydney Jones, Dr. F. C. Batchelor, Hon. G. H. Butler, Professor E. C. Stirling, C.M.G., Professor H. B. Allen, Surgeon-General W. D. C. Williams, C.B., Fleet-Surgeon V. Gunson Thorpe, Fleet-Surgeon F. Falconer Hall. The executive committee is composed as follows: President, Past President, General Secretary, Associate Secretary, Treasurer, Dr. G. H. Abbott, Dr. W. G. Armstrong, Dr. Richard Arthur, Dr. Fourness Barrington, Dr. H. G. Chapman, Dr. C. B. Clubbe, Dr. W. H. Crago, Dr. Gordon Craig, Dr. J. A. Dick, Dr. T. Fiaschi, Dr. J. Foreman, Dr. J. Macdonald Gill, Dr. Sinclair Gillies, Sir J. Graham, Dr. H. C. Hinder, Dr. A. Jarvie Hood, Dr. J. L. T. Isbister, Dr. C. H. E. Lawes, Dr. H. L. Maitland, Dr. Odillo Maher, Dr. A. E. Mills, Dr. W. McMurray, Hon. Dr. J. B. Nash, Dr. Russell Nolan, Dr. R. Paton, Dr. Clarence Read, Dr. G. E. Rennie, Dr. Reuter E. Roth, Dr. Eric Sinclair, Dr. R. Scot Skirving, Professor Anderson Stuart, Dr. Ashburton Thompson, Dr. R. H. Todd, Professor Welsh, Professor Wilson, Dr. P. M. Wood, and Dr. Ralph Worrall. Various Sections of Congress:—1. Section of Medicine: President, Dr. W. T. Hayward (Adelaide). 2. Section of Surgery: President, Dr. G. A. Syme (Melbourne). 3. Section of Obstetrics and Gynæcology: President, Dr. G. Rothwell Adam (Melbourne). 4. Section of Anatomy, Physiology, and Pharmacology: President, Dr. E. H. Embley (Melbourne). 5. Section of Pathology, Bacteriology, and Tropical Medicine: President, Dr. Wilton W. Love (Brisbane). 6. Section of Public Health and State Medicine: President, Mr. James W. Hope (Fremantle). 7. Section of Ophthalmology: President, Dr. J. W. Barrett (Melbourne). 8. Section of Psychological Medicine and Neurology: President, Mr. W. Beattie Smith (Melbourne). 9. Section of Diseases of Children: President, Dr. A. Jeffreys Wood (Melbourne). 10. Section of Naval and Military Medicine and Surgery: President: Colonel C. S. Ryan (Melbourne). 11. Section of Dermatology, Radiology, and Medical Electricity: Presidents, Mr. H. F. Lawrence (Melbourne) and Dr. F. J. Clendinnen. 12. Section of Laryngology, Rhinology, and Otology: President, Dr. W. L. Robertson (Brisbane). The State Secretaries of Congress are Dr. Arthur Jeffreys Wood, 19, Collins-street, Melbourne; Dr. Wilton W. Love, Wickham-terrace, Brisbane; Dr. John B. Gunson, North-terrace, Adelaide; Dr. Gregory Sprott, Macquairie-street, Hobart; Dr. A. J. H. Saw, Perth, West Australia; Mr. Stanley Batchelor, Dunedin, N.Z.; and Dr. W. E. Herbert, Boulcott-street, Wellington, N.Z.

Obituary.

JOHN ANDERSON, C.I.E., M.D. ST. AND., F.R.C.P. LOND.

WE briefly announced last week the death of Dr. John Anderson, late of Harley-street, which event took place on Oct. 10th at 33, St. Charles-square, North Kensington, where he had been residing recently. The sudden occurrence of a severe hemiplegic attack in March last from the first could only have one ending, but, some two months before that ending mercifully came, death in an unexpected and rapid form removed his wife. The whole tragedy has aroused the painful interest and deep sympathy of the medical profession; this it would have done in any event, but in the case of a man so well known and beloved as the late Dr. Anderson the feeling both inside and outside his own profession has been very widespread.

John Anderson was born in 1840 and received his medical education at the Royal Infirmary, Manchester, where he was clinical clerk and dresser to the late Mr. Watson Beevor, one of the senior surgeons, a man well known in those days in Lancashire as a brilliant surgeon and operator. It was probably then that Anderson first acquired the facility as a deft manipulator which he always retained and which made him at one time a very neat and dexterous surgeon. At the Manchester Infirmary he made the acquaintance of Dr. (afterwards Sir) William Roberts, the lecturer on medicine at that school, and this subsequently ripened into a firm friendship during the time that Sir William Roberts and Anderson were both residing in London before the former's death. In 1861 and 1862 Anderson obtained what were the usual qualifications of that time, the M.R.C.S. Eng. and L.S.A. Lond., and was appointed successively house surgeon and house physician at the Manchester Royal Infirmary. Entering the Army Medical Service in 1864 he served for many years in India in the Royal Artillery and was in the "Chestnut Troop of Horse Artillery" until the regimental system was abolished. Throughout his career in India, and, indeed, up to the time of his last and fatal illness, Anderson enjoyed perfect health, and his courage and activity, mental and physical, were due to this fact and to his optimistic nature. These qualities fitted him for the ofttimes trying duties and vicissitudes of Indian army life, and he was indefatigable in rendering medical aid in the presence of epidemic disease. On his return home he served in Edinburgh and at Camberley in connexion with the Royal Military College. Whilst at the former station he availed himself, as far as practicable, of the great advantages of Edinburgh University, studied hard there, and went through a course of practical anatomy. He returned to India in a dignified and responsible capacity, for he was specially selected by the late Marquis of Ripon for his personal staff. He accompanied Lord Ripon to India and returned with him to England at the end of his Viceroyalty, having been previously made a Companion of the Indian Empire. He was greatly esteemed by the Viceroy and his staff, and his medical opinion was much sought after by patients of every class.



JOHN ANDERSON, M.D. ST. ANDREWS, F.R.C.P. LOND., C.I.E.

He retired from the Army in 1885, with the rank of Brigade-Surgeon, and began practice in London, becoming physician to the *Dreadnought* Hospital for Seamen and to King Edward's Hospital for Officers, and was for many years member of the Appeal Board at the War Office. He was also appointed lecturer on tropical diseases at St. Mary's Hospital. When he decided to commence practice in London he graduated in medicine at the University of St. Andrews and took the Membership of the Royal College of Physicians of London, of which corporation he was later made a Fellow. At first he practised in Gloucester-place, but soon afterwards moved to 9, Harley-street. His great and varied experience in India made him from the beginning a recognised authority on tropical disease. But it would be a great mistake to regard his practice as having been limited to that direction, for it was really of a very varied character. He was found by those who called him in to be so helpful in diagnosis and so resourceful in his suggestions for treatment that he rapidly passed from the position of a specialist in tropical medicine to that of a general consultant physician. He was transparently loyal in all his dealings, and possessed the happy knack of inspiring confidence, so that without a trace of insincerity he would turn even chance acquaintances into personal friends. It must have been the recognition of his sterling qualities of character as well as of his medical knowledge that led so many of the medical leaders of the day to seek his advice and help when they themselves or those near to them were sick, and all of them honoured him with their friendship. He was essentially a working and practical man, and made but few contributions to medical literature, but his communications to our columns were sound clinical observations.

"About 48 hours prior to the date (in March last) of his fatal illness," one of the oldest and most intimate of his many friends writes to us: "Anderson seemed at his best. He made a long visit to my house, and I had never seen him in better form, health, and spirits than on that occasion. His talk was on literary and scientific as well as on professional and political topics, and he expressed himself in a genial and outspoken way and with a clearness that was delightful to listen to at the time, and calculated, like all close intercourse with him, to leave a fragrant recollection in the consciousness of his listener. For there was nothing mean in thought and deed about him. What he gave he gave with an open palm, and

> 'With liberal hand and bounteous heart
> Shared all his little fortune could impart.'"

The impression of geniality, generosity, and ability conveyed by the words which we have quoted sum up the man, and show why his loss has been so widely felt.

He was attacked early in March last with a grave form of paralysis (right hemiplegia and aphasia) from which he never recovered, and died, as already said, on the night of Oct. 10th. He had throughout his illness the unremitting attention of his old friend and fellow student at the Royal Infirmary, Manchester, Dr. Alfred Clarke, late of the Royal Military College, Sandhurst, and that of Sir William Allchin, Surgeon-General Marston, and others. Dr. Anderson married, in 1877, Miss Jessie Usher Dunlop, who died very suddenly on August 10th last. He leaves four children, to whom we offer our deep sympathy.

PROFESSOR ERNST VON LEYDEN.

THE whole medical profession has to mourn the death of Dr. Ernst von Leyden, formerly professor of clinical medicine and director of the First Medical Clinic of the University of Berlin.

Professor von Leyden was born in 1832 at Danzic, his father being a high official in the Government service, and at the early age of 17 years he became a medical student in the Army Medical College at Berlin, where he took the degree of M.D., and passed the State examination in 1853. He then served as a military surgeon in the army till, in 1862, he was commissioned to take one of the assistantships at the Charité Hospital reserved to army medical officers. He in this way became an assistant to the celebrated physician, the late Professor Traube, at that time professor of clinical medicine, and the first man in Berlin to introduce modern experimental methods in clinical teaching. Professor Traube soon recognised the talents of his assistant and employed him in the most difficult clinical work. On his instigation Dr. von Leyden applied himself especially to diseases of the spinal cord. The results of his studies were his works on "The Degeneration of the Posterior Tracts of the Spinal Cord" and the "Clinic of Diseases of the Spinal Cord," which brought him much celebrity as a teacher and writer. He accordingly left the army, being called as early as 1865 to take the chair of Clinical Medicine at the University of Königsberg. He lived there till 1872, when he left Königsberg for the newly founded University of Strasburg. In 1876 he became the successor of his master, the late Professor Traube, as professor of medicine in Berlin, and held that appointment till 1907, when he resigned because of his advanced age. After his first work on spinal diseases he wrote a great many others—on bulbar paralysis, on aphasia, and on cerebral pressure. His work, however, was not confined to the diseases of the nervous system, but extended to many other departments of medicine. He found in the sputum crystals named after the celebrated French *savant*, Professor Charcot; he described subdiaphragmatic abscesses, and showed that endocarditis might be caused by Neisser's gonococcus and Fränkel's pneumococcus. He was not only a medical writer and an original observer, but a great physician, and in his clinical lectures he always laid stress on the therapeutical side of medicine. This may appear now rather common-place, but was not so at a time when the great majority of clinical teachers cultivated exact diagnosis but neglected the details of treatment.

As a physician Professor von Leyden was of European renown, and patients of every country were found in his consulting-room. Russians went in great number to consult him, and he was often called to Russia to see patients who were unable to travel. The number of his Russian patients included the late Emperor Alexander III, but he had a large *clientèle* among other reigning families also, and he was one of the physicians in attendance on the late Emperor Frederick during his last illness. At the same time he was not neglectful of the sick poor, and a great deal of his work during the later period of his life was devoted to the care of indigent tuberculous patients. It was especially by his endeavours that the sanatorium movement in Germany has been so successful and that thousands and thousands of indigent patients are now received all the year round in these institutions. He took a prominent part in schemes for the prevention of tuberculosis, and was one of the presidents of the Central Committee on Tuberculosis. At a very advanced age he began systematic study of the prevention of cancer which he believed to be of an infectious nature. A central committee having this for its object was founded and presided over by him, and dispensaries for cancerous patients were established. When he resigned his post as professor of medicine in 1907 he continued to be at the head of a cancer ward, especially created for him, in the Charité Hospital.

His faculty of being up to date, even at an age when other men have some difficulty in following new ways, was one of the principal features of his character, and therefore he became fully aware of the importance of physical and dietetic treatment. He recommended this treatment in his clinical lectures, and edited, together with his former assistant, Professor Goldscheider, the *Zeitschrift für Physikalisch-Diätetische Therapie*. A great work, "Die Deutsche Klinik am Beginn des 20. Jahrhunderts," edited by him and Dr. Klemperer, was a description of modern views and methods of clinical medicine. He was a constant opponent of excessive specialism in medicine, and when he believed that in the Berlin Medical Society clinical medicine was put somewhat in the background by the different special branches he did not hesitate to resign his membership and to found in Berlin a new society for internal medicine, of which he was the president until his death. He also was the founder, and on various occasions the chairman, of the Congress für Innere Medicin.

During his long career many and high honours were conferred on him. On the occasion of his seventieth birthday he received titular honours, and a few years ago the rank of Real Privy Councillor, with the title of Excellency, was conferred on him. He continued to be very active until last winter, when he fell on the stairs and sustained a fracture of the neck of the femur from which he did not recover. His death will be greatly deplored, not only because of his attractive personality, but also because he was a good man and a good physician.

CHARLES HANLEN GAMBLE, M.R.C.S. ENG., L.S.A., J.P.,

CONSULTING SURGEON TO THE NORTH DEVON INFIRMARY.

Mr. C. H. Gamble died recently at his residence in Barnstaple. The deceased, who was the oldest member of the medical profession in North Devon, was born in 1825, his father being the late Rev. H. Gamble, vicar of Newport, Barnstaple. He received his medical education at Guy's Hospital and qualified M.R.C.S. Eng. and L.S.A. in 1848. He shortly afterwards commenced practice at Barnstaple, joining his uncle, the late Dr. T. S. Law. Mr. Gamble practised in Barnstaple for about 60 years, and it was only quite recently that he retired from active work. He had been a member of the honorary medical staff of the North Devon Infirmary for more than 50 years. He was a magistrate for the borough and at one time was a member of the town council. Mr. Gamble was one of the first to join the Volunteer movement and was formerly surgeon-major in the North Devon Yeomanry. He took a great interest in everything connected with Barnstaple and was highly respected and esteemed by all the residents of that town. He was a staunch Churchman, and for many years churchwarden at Holy Trinity Church. Mr. Gamble celebrated his golden wedding about a year ago. He leaves two children—the Rev. H. R. Gamble, vicar of Holy Trinity, Chelsea, who was formerly mayor of Chelsea, and Mrs. James, wife of a solicitor at Barnstaple. Mr. Gamble will be much missed in North Devon, especially by the poor, to whom he was always a generous friend.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The death of the following eminent foreign medical man is announced:—Dr. Francesco Laccetti, *privat-docent* of anatomy in the University of Naples.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Medical Registration Bill.

IN the forefront in many things, New Zealand still lags behind with respect to the law governing the registration of medical men. Many attempts have been made to remove the disabilities under which the profession labours, but democratic parliaments are somewhat fearful of what are termed close corporations. The most recent attempt to bring our law into line with that of other countries is in a great measure due to the energy and insistence of Dr. H. E. Gibbs of Wellington. The Bill, which it is hoped will be taken up by the Government, provides for the incorporation of a society to be termed the Society of Registered Medical Practitioners of New Zealand. The affairs of the society are to be managed by a board consisting of (1) one registered medical practitioner for each district to be appointed by the Governor; (2) one registered medical practitioner resident in the district elected by the practitioners in the district; (3) and one practitioner elected by the New Zealand University

Senate. The usual machinery is included for the working of the board, but Section 12, however, seems far from satisfactory. It runs as follows:—

(1) The Board may from time to time make regulations for the purpose of regulating its own procedure, and of generally carrying this Act into effect, but no such regulations shall have any effect until it is *approved* by the Government and gazetted. (2) The Governor may from time to time suspend the operation of any such regulations.

It will be seen from this that in any real conflict the power will lie in the hands of the Government. Sections 14 and 19, which deal with the erasure of offending members' names from the Register, are also far from satisfactory, but I fear that, even incomplete as they are, there will be great opposition when the Bill comes before Parliament. These sections give to the person whose name has been ordered to be removed from the Register power of appeal to the Supreme Court, "and such appeal shall be in the nature of a re-hearing." Thus it will be seen that the powers of the board do not err on the side of being too absolute. The qualifications for registration are: (1) A graduate in medicine or surgery of the New Zealand University; or (2) registered on the Register kept in accordance with the provisions of the Acts regulating the registration of medical practitioners in the United Kingdom; (3) eligible for registration on such last-mentioned Register; or (4) the holder of a foreign diploma approved by the board, granted after a course of not less than five years' study of the subjects pertaining to a medical or surgical degree or licence. Provided that no university, college, or other body in any country other than the United Kingdom shall be recognised by the said board for the purposes of this Act unless it appears to the board that the graduates in medicine or surgery of the University of New Zealand are by virtue of such graduation, and without further examination, entitled to practise medicine and surgery in such country, either on registration therein or otherwise. 5. One from whom no testimonial, diploma, licence, nor certificate has been withdrawn by the college, university, or other body granting it on account of the holder having been convicted of infamous conduct in a professional respect or of a felony or misdemeanour. 6. A person of good fame and character.

Children's Hospital, Wellington.

For some time past the need for a better hospital for children in the capital city has been obvious. In response to an appeal by the Mayor the sum of £6000 was collected in about ten days. Most valuable help was rendered by Mr. Ward and Miss Grace Palotta, members of a theatrical company which happened to be playing in Wellington during the collection week. With the subsidy of 24*s.* per pound from the Government there is every hope that ere long a suitable hospital will be established.

Contagious Diseases Act.

At the invitation of the Attorney-General, the medical associations have held several discussions on the question of whether there should be any alteration of the law relating to contagious disease. There is at present on our statute-book a Contagious Diseases Act which gives power to local authorities to bring into force the provisions of the Act. For a great number of years the Act has been practically a dead-letter because no municipality has availed itself of the provisions of the Act. Every year certain associations of women petition for a repeal of the statute. Hitherto the Government has simply "received" the petition, but this session it has been moved to suggest that the Act should be repealed. Before taking action, however, the Attorney-General has requested from the profession a statement as to the amount of syphilis in the Dominion, and what measures it considers necessary. There would appear to be no very definite data available, and the counsels offered are truly various. The general opinion seems to favour the recommendation of the late chief health officer that syphilis ought to be included amongst the list of notifiable diseases. If this were done, with a very slight amendment of the Public Health Act, complete control of recognised brothels could be accomplished, syphilis and gonorrhœa would be brought into line with the other infectious diseases, and the same measures could be employed to prevent their spread. A great deal would depend upon the wisdom exercised by the officials in what action they took upon notification. Desirable as it is, however, that something should be done to check the evil consequences of such diseases, there will, I fear, be much opposition offered when the suggestion comes up for decision in the House. The reason for the present discussion was the asked-for removal of the only Act on the statute-book dealing with contagious diseases, and it is unlikely that the petitioners will be satisfied with anything less than its removal.

Sept. 5th.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the quarterly meeting of the Council held on Oct. 13th the undermentioned diplomas were conferred upon the following gentlemen, who have now complied with the by-laws:—

M.R.C.S.—Walter Egbert Fox, Guy's Hospital; William Macewen, M.B., Ch.B.Glasg., Glasgow University and Charing Cross Hospital; Edward Vernon Whitby, M.B., Ch.B. Birmingham, Birmingham University.

L.D.S.—Harold Todd Reeve, Guy's Hospital; and Albert John Schaefer, Guy's Hospital.

UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B., Botany; Z., Zoology; P., Physics; and C., Chemistry):—

Robert Aitken (B., P.), George Kirkwood Allan (B., P.), John Anderson (Z., P., C.), Andrew Duffield Blakely (Z.), John Bradford (B., P.), Maurice Smith Bryce (B., Z., P., C.), John Cameron (B., Z., C.), John Campbell (Z.), John Munro Campbell (B., P.), Thomas Watson Carstairs (B.), Alfred Mackenzie Clark (B., P.), Robert Clark, M.A. (B., Z., P., C.), Andrew Climie (B., P.), William Combe (B., P.), James Paterson Crawford (B., P., C.), Henry Paterson Crow (B., P.), Fritz Vivian Daeblitz (Z., P.), Michael Devers (B.), Alexander Hogg Donaldson (B., P.), Thomas Ingram Dun (Z.), Dugald Ferguson (B., P., C.), Thomas Ferguson (Z., C.), Harry Taylor Findlay (B., P.), James Jackson Finlay (B., P.), George Fleming (B., Z., P., C.), Robert Forbes (B., P.), Ian Maclean Frazer (Z., C.), Robert Frew, B.Sc. (B., P.), Walter Weir Galbraith (Z.), David Gould Gardiner (B., P.), Leonard Woodburn Gemmell (Z., P.), John Albert Frank Gibson (B., C.), Robert Stuart Gibson (B., P.), William Gibson (B., P., C.), John Aitken Gilfillan (B., P.), Peter Gordon (B., P.), Ronald Thomson Grant (B., P.), Alexander Hislop Hall (B., P.), David Cochrane Hanson (B., C.), Joseph Welsh Park Harkness, M.A. (B.), Fergus Leslie Henderson (B., P.), Rollo Isbister (B., P., C.), Alastair Caulfield Jebb (B., P.), Douglas Reid King (Z., P., C.), George Kirkhope (B., P.), William Fulton Kivlichan, M.A. (C.), Robert Kyle (B., P.), Hugh Brown Lawrie (B., P.), Robert Lindsay (B., P.), Alfred Thomas Logan (B., P.), George M'Callum (B., P.), Joseph M'Culloch (B., C.), Archibald Munn M'Cutcheon (B., P.), Robert William MacDonald (B., Z.), Donald John Macdougall (B., Z., C.), Donald Kerr MacDougall (B., P.), Gerald James M'Gorty (B., P.), Donald M'Intyre (B., P.), David Mackie (P.), James Graeme M'Kinna (B., P.), Joseph Allan Maclean (B., C.), Malcolm Bonar Macleod (B., P.), David M'Neill (B., P.), James Kennedy Manson (Z., C.), Walter John May (C.), Thomas Duff Miller (B., P.), James William Moffatt (B., P.), Percival John Moir (B., Z., C.), Laurence Sebastian Morgan (B., Z., P., C.), Hugh Adam Munro (P.), Thomas Fraser Noble (Z.), William O'Brien (Z., C.), John Roberts Pate (B., P.), James Paterson (B., P.), Andrew Picken (B., P.), John M'Lean Pinkerton, B.Sc. (B., Z.), John Stuart Prentice (C.), Hugh Quigley (B., Z., C.), Angus M'Innes Ramsay (Z.), Frederick Powlett Rankin (B.), Adam Rankine (B.), Thomas Forbes Brown Reid (B., Z., P., C.), David Bell Robertson (Z., C.), George William Ronaldson (P.), Robert Rowan (B., P.), Archibald M'Kerrow Russell (B., P.), William Jack Scade (B., P.), Seymour Cochrane Shanks (B., P.), William Frederick Shanks (B., Z.), Thomas Robertson Sinclair (B., Z., P.), John Smith, M.A. (B., Z.), Norman M'Gaan Smith (B., P.), John Banks Steven (B., P.), John Fraser Steven, M.A. (B., Z.), Henry Stewart, M.A. (B., Z.), Robert Sutherland Strachan (P., B.), Robert Taylor (B., P.), Donald Fraser Sage Thomson (B.), Robert Noel Thomson (B., P., C.), James Valiance (B., P.), James Walker (C.), William Semple Wallace (B., Z.), William James Cunningham Watt (Z.), John Allan White (Z.), Robert Horatio Williamson (Z.), Alexander Sweet Wilson (P.), James Gordon Wilson (P.), Robert James Wilson (B., P.), Thomas M'Skimming Wilson (Z.), John Wylie (B., P.), Alexander Young (C.), and Gavin Young (Z., C.).

Women.—Dagmar Florence Curjel (B., P.), Margaret O'Rourke Gallagher (B.), Ethel Winifred Gompertz (B., P.), Florence Scott Kirk (B., P.), Jessie Gordon M'Laren (B., P.), Janey Lamond Munro (B., P.), Helen Young Murdoch (B., P.), Mary Isabel Sinclair (C.), Grace Birrell Whish (B., P.), and Mary Ferguson Wood (Z.).

The following have passed the Second Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A., Anatomy; and P., Physiology; and M., Materia Medica and Therapeutics):—

William Larmour Anderson (A., M.), James Angus (M.), Simon Harry Bloom (A.), William Brown (A.), Alexander Grahame-Buchanan (A., M.), James Wilson Burton (A.), Norman Cameron (A., M.), George Wilson Clark (A.), Robert Craig, M.A. (M.), Daniel Augustine Cush (A., M.), Alexander Hugh Davidson (A.), James Henry Dible (M.), Philip Figdor (A.), John Maitland Forsyth (A., M.), William

Fotheringham (M.), James Fraser (A.), Adolph Robert Hanns Geyer (M.), Leopold Glushak (A., M.), Cecil William Fletcher Greenhill (A.), John Ferguson Hutton, M.A. (A.), Thomas Pollock Inglis (A., M.), Charles Joseph Hamilton Kirk (A.), John Finlayson Lang M.A. (A., P., M.), William Joseph Brown Lavery (P.), Frank Whitwell Kinnear Lawrie (A., P., M.), Robert Aim Lennie (A., P., M.), Carel Johannes van Lingen (A., P., M.), John Aloysius M'Connochie (M.), James Ronald M'Curdie (A.), John Henry Magoveny (A., M.), William Montgomery (A.), Kenneth Duncan Murchison (A., M.), Andrew Neilson (A., P.), John Boyd Orr, M.A., B.Sc. (M.), Andrew Peden (A., M.), James Purdie (A., M.), James Francis Quigley (Lambhill) (A., P.), David William Reid (M.). John Ritchie Richmond Ritchie (M.), Alfred Leopold Robertson (M.), James Gordon M'Gregor Robertson (A.), James Hinton Robertson (M.), Frank Shearar (A.), John Finlayson M'Gill Sloan (A.), Hendrik Cornelius van der Wat Smit (A., P., M.), James Anstruther Smith (A.), John Kenneth Smith (A., P., M.), George Taylor (A., P.), William Taylor (M.), Angus Walker (M.), John Cuthbertson Walker (P., M.), Thomas Walmsley (M.), Frederick John Whitelaw (P., M.), Archibald Wilson (A.), and William Ferguson Wood (A., M.).

Women.—Janet Rankine Anderson (P., M.), Jane Malcolm Davidson, (M.), Lillias Beverley Hardie (A.), Jane Kerry M'Elroy Hunter (M.), Mary Anne Kirk (P.), Maggie Logan Kirkwood (M.), Margaret Helen M'Killop (A., P., M.), Petrina Stewart (A., M.), and Janet Morris Walker (P., M.).

The following have passed the Third Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (P., Pathology; and M., Medical Jurisprudence and Public Health):—

Mark James Aitken (P., M.), James Browning Alexander (P., M.), John Campbell Hill Allan (P.), Alexander John Archibald (P., M.), William Egon Halman Beard (M.), John Bower (P.), Charles Brash (P.), Angus Dugald Buchanan (P.), William Murdoch Buchanan (P., M.), George Cochrane, M.A. (P.), James Alphonsus Joseph Conway (P., M.), James Findlay, M.A. (M.), Robert Findlay (P., M.), David Thomas Crichton Frew (P., M.), John Joseph Gibb (M.), Joseph Graham (M.), Charles Hope Haddow (M.), Andrew Smith Hannay (M.), Daniel Christopher Hayes (P., M.), Alexander Gibson Henderson (M.), Andrew Gray Holms (P., M.), William Hunter Howat (P., M.), James Johnstone (M.), Felix Arthur Kerr (P., M.), Thomas Joseph Kirk (M.), Alexander Kirkhope (M.), Murdoch Hugh MacLeod (M.), Stephen Anderson MacPhee (P.), George Hanson M'Robert (P.), Stuart Spence Meighan, B.Sc. (M.), John Mitchell (P., M.), Michael John Murray (P.), Archibald Naismith (P.), James Eric Paterson (P., M.), Alexander Rae (M.), Henry Charles Deans Rankin (P., M.), Hugh Young Riddell (P.), John Livingstone Scott (M.), William Logan Scott (M.), James Smith (P., M.), Malcolm Sommerville (P.), Lawrence Tweedie Stewart (M.), Thomas Louis Grenet Stewart (P., M.), William Tudhope (M.), Alexander Guthrie Semple Wallace (P.), Tom Waterhouse (M.), Hugh Ferguson Watson, L.R.C.P. (M.), Thomas Whitelaw (P.), Douglas Wilson (M.), Hugh Gilmer Wilson (P.), and Walter Percy Yates (P.).

Women.—Barbara Macgregor (P., M.), Ellen Brown Orr (P., M.), Lucy MacBean Ross (P., M.), Christina Hamilton Shearer (P., M.), and Isabel Jane Stark (P., M.).

The following candidates passed with distinction in the subjects indicated:—

FIRST EXAMINATION.

Botany and Physics.—Archibald Munn M'Cutcheon.
Botany.—Dagmar Florence Curjel and James Graeme M'Kinna.
Zoology.—John Cameron, John M'Lean Pinkerton, B.Sc., and Robert Horatio Williamson.
Physics.—Robert Frew, B.Sc., Robert Stuart Gibson, Ronald Thomson Grant, Robert Lindsay, and Andrew Picken.
Chemistry.—James Kennedy Manson and Gavin Young.

SECOND EXAMINATION.

Materia Medica and Therapeutics.—James Henry Dible, James Hinton Robertson, and Thomas Walmsley.

THIRD EXAMINATION.

Pathology, Medical Jurisprudence, and Public Health.—James Eric Paterson.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Oct. 12th, Dr. G. F. Blandford, the President, being in the chair. Fourteen directors were present. The audited accounts of the half-year ending June 30th were read and passed. By them it was seen that the income derived from investments during that period amounted to £1497 18*s.* 6*d.*, £245 14*s.* had been received in ordinary subscriptions and £46 4*s.* in life subscriptions. £1310 10*s.* had been distributed amongst the annuitants of the charity. The sum of £534 was voted to be paid in December as a Christmas present, each widow to receive £10, each orphan £3, and each orphan of the Copeland Fund £5. Two medical men were elected members of the society. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius of Charing Cross. Relief is only granted to the widows and orphans of deceased members; letters are constantly being received from widows of medical men asking for assistance, but this has to be refused as their husbands had not been members of the society. Full particulars and application forms for membership may be obtained from the Secretary at the offices of the Society, 11, Chandos-street, Cavendish-square, W.

KING'S COLLEGE, LONDON: SPECIAL PHYSIOLOGY LECTURES.—A course of four lectures, with experiments, on Tissue Respiration will be delivered in the Physiological Laboratory by Mr. Joseph Barcroft on the following Mondays, at 4.30 P.M.: Oct. 31st, Nov. 14th and 21st, and Dec. 5th. The course is free to students and members of King's College, to internal students of the University of London, to all medical students in London, and to medical practitioners on presentation of visiting cards.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—On Nov. 3rd Professor Osler will deliver an address entitled "The Hospital Unit in University Work" in the Connaught Hall (Y.M.C.A. Buildings), Newcastle, at 4.30 P.M., and will be the guest of the society at a dinner to be held in the King's Hall, Armstrong College, at 7.15 P.M. on the same evening. All members of the medical profession in the north of England are most cordially invited to be present at the address and dinner, for which tickets (price 10*s.* 6*d.*) can be obtained from the secretaries, Dr. William Hume and Mr. R. J. Willan, 25, Ellison-place, Newcastle-on-Tyne.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall, and Cox will publish on Tuesday next, Oct. 25th, a book on "Accidents in their Medico-Legal Aspect," which they have had in preparation during the last two years. The work is divided into three sections—legal, medical, and a case guide—and the index covers all three parts. The medical part of the book has been written by over 30 medical men who are, or have been, teachers at the great schools of medicine. The case guide is a short epitome of nearly every case referred to in the legal section, with a number of other cases of personal injury. This royal octavo volume of about 1300 pages is published at 30*s.* net, and should be of great use to both the medical and the legal profession.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The annual meeting of this society was held on Oct. 14th, when the President, Dr. W. G. Willoughby, delivered an address on the Duties of a Medical Officer of Health. After referring to the more or less definite duties prescribed for medical officers of health by orders of the Local Government Board, he pointed out that these apparently limited their work to the prevention of disease. The boundary-line between prevention and treatment was so very indefinite—such, for example, as the sanatorium treatment of consumption and the use of antitoxin—that certain treatment had for some time been included within the scope of their duties. Though no one could rationally object to the two instances given, it was a matter for considerable doubt and debate as to how far a medical officer of health should go in the actual medical and surgical treatment being introduced in the form of school clinics. He dealt at some length with the important part played in public health by the home life of the people and urged that medical officers of health should find time to study the houses of the poor in their districts. He did not altogether agree with the statement contained in the Minority Report of the Poor-law Commission that four-fifths of the work of the medical officer of health was wrapped up in the casual labourer and his home. Poverty, overcrowding, hopelessness, ignorance, unemployment, consumption, mental defectiveness, crime, and alcoholic excess were often so closely intermingled that which was cause and which effect it was difficult to decide. The insanitary house was the constant accompaniment of these conditions, and from them came the bulk of the dirty conditions and neglect which led to personal ill-health. He then referred to a fact taken from a small experience that mentally defective children were found to be specially connected in undue proportion with dirty and unsatisfactory houses. The causes of this special connexion were sometimes difficult to determine, but often mentally defective children had mentally defective parents, and the neglect of the home and children might be due to weak-mindedness rather than to viciousness or intentional neglect. It was unfortunate that efforts during school life to improve the intelligence of a feeble-minded child often resulted in bringing it to a state when it could merge, though imperfectly intellectually developed, into the marriage market with disastrous results to the future generation. In Dr. Willoughby's opinion, the sooner the Government adopted these feeble-minded people and directed their careers the better it would be for the public health of the country. The annual dinner of the society was held on the same evening at

the Waldorf Hotel. The President occupied the chair, and the company included Sir Dyce and Lady Duckworth, Mrs. W. G. Willoughby, Rev. Dr. and Mrs. J. M. Willoughby, Sir Lauder Brunton, Mr. F. Hollins, Sir Shirley and Lady Murphy, Mr. and Mrs. H. T. Butlin, Mrs. B. Broadbent, the Mayor of Battersea, Dr. J. Priestley, and Mr. W. A. Lawton.

READING PATHOLOGICAL SOCIETY.—The annual meeting and dinner of this society took place on Thursday, Oct. 20th, when an annual oration was given by Sir Lauder Brunton, Bart., who chose as his subject, "Blood Pressure from a Clinical Point of View."

THE Master and Wardens of the Society of Apothecaries of London attended Divine service on St. Luke's Day, Oct. 18th, at St. Anne's-by-the-Wardrobe, E.C., and dined together in their hall in the evening, the occasion being the induction of the new Master, Mr. A. T. Norton, C.B. The Court of Examiners and many of the deans of the London medical schools were guests, and heard a very practical speech from Mr. Norton.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—On Oct 5th Mr. James Taylor, M.D., C.M. Aberd., J.P. for Banffshire, was presented by his patients and friends in the town of Keith and surrounding districts with a motor car as a mark of their respect and esteem after 25 years' active practice. Provost Cameron, who made the presentation, said, generally speaking, they owed much to the profession to which Dr. Taylor belonged, for to its members were mainly due the great advancement in sanitation and improved conditions affecting the public health. Twenty-five years had passed since first Dr. Taylor commenced practice in Keith after a distinguished university career, and during that time he had spared neither his time nor his health, and had gained the confidence of an ever-increasing *clientèle*, not only as a trusted and skilful physician, but also as a counsellor and sanitarian. Four handsome silver candlesticks, together with a hall gong, bearing the following inscription, were presented to Mrs. Taylor: "This gong, together with four silver candlesticks, was gifted to Mrs. Taylor as a memento of the presentation to Dr. Taylor of a motor-car on the attainment of his semi-jubilee as a medical practitioner in Keith and district. August, 1910."—Mr. Richard Brayn, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., medical superintendent of Broadmoor Criminal Lunatic Asylum, was presented by the staff, on Oct. 14th, with a silver rose-bowl and an album on the occasion of his retirement.

LONDON SCHOOL OF TROPICAL MEDICINE.—The annual school dinner was held at the Savoy Hotel on Oct. 14th, Mr. James Cantlie being in the chair. After the loyal toasts had been given, Mr. W. H. Lever (chairman of the Liverpool School of Tropical Medicine) proposed the toast of "The School." He referred to the need of money for carrying on the important imperial and economic work of research in tropical medicine and the desirability of making known this need. The Schools of Tropical Medicine both in London and Liverpool, between whom the most cordial relations existed, were engaged in breaking down the barrier which blocked the utilisation of the great resources of the tropics, and deserved from Government more help than they were given, if only in return for the half-million pounds annually which tropical medical officers saved the nation in the lives of men of the army and navy. Mr. James Cantlie responded, extending to Mr. Lever, as representing the Liverpool School, the same feelings of cordiality which he had expressed towards them. The toast of "The Orator of the Day" was proposed by Lord Sheffield and responded to by Dr. Henry Miers, who referred to the need for closer coöperation between the University of London and its schools, which might be supplied by providing the University with a building suitable to its dignity and requirements. Mr. Percival Nairne proposed "The Guests," a toast which was responded to by Sir Havelock Charles. The health of the chairman was proposed by his friend, Professor W. J. Simpson, and in reply Mr Cantlie made a speech of characteristic humour which was so well received that he concluded with the remark "London folk are no ill to please." Amongst those present were Sir West Ridgeway, Mr. E. W. Blessig, Professor W. R. Smith, Sir William Treacher, Surgeon-General J. E. Godfrey, Dr. F. M. Sandwith, Sir Francis Lovell, Mr. H. J. Read, and many officers of the Army Medical and Indian and Colonial Services.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students will be held on Saturday, Nov. 26th, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. H. Lloyd Williams. Gentlemen either now or formerly connected with the hospital or medical school who may, through inadvertence, not have received special notice and who desire to be present are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester-square, London.

DONATIONS AND BEQUESTS.—By the will of the Rev. Henry Thornhill Morgan, vicar of St. Peter in Eastgate with St. Margaret, Lincoln, the testator bequeathed £500 to the East Derbyshire Hospital, Chesterfield, and £100 to the Royal Berkshire County Hospital, Reading.—The late Mr. William Hall of London, N., among other bequests, left £500 to the Lincoln County Hospital.—A gift of £1000 has been made to the funds of the Stratford-upon-Avon Hospital by Mr. W. B. Gibbins, a member of the Society of Friends.—The late Mr. Edward Matyear has left by will £500 to the West London Hospital, and the residue of his estate, amounting to over £60,000, to King Edward's Hospital Fund.

THE COUNTY COUNCIL AND THE MILK-SUPPLY OF LONDON.—During the three months ended Sept. 30th, 1910, 753 samples of milk sent to London from the home, Midland, and Western counties were taken by London County Council inspectors at the principal railway termini. The examination of 641 samples has been completed, with the result that 79, or 12·3 per cent., were found to be tuberculous. Part IV. of the General Powers Act, under which this work is authorised, came into operation on July 1st, 1908, and the total number of samples taken since that date is 4915: 4126 have been examined, and 435, or 10·5 per cent., found to be tuberculous. Of 3152 cows examined on farms during the quarter, 38, or 1·2 per cent., were found to be suffering from tuberculosis of the udder. The percentage since the Act came into operation, based on 23,978 examinations, is 1·8.

WITH the object of drawing the attention of medical men and the public to their obligations under the Notification of Births Act, Dr. C. S. Jaffe and Dr. W. W. Don were summoned, at the instance of the Paddington borough council, before the magistrate at Marylebone police court, for that, having been present at the birth of certain children in the parish, they failed to give notice in writing of the birth to the medical officer of health within 36 hours afterwards. The fathers of two children were also summoned for failing to give notice. Mr. Dennis, for the council, stated that over 60 summonses might have been issued against medical practitioners and fathers, but the council had contented itself with four. The magistrate inquired if there was any objection on the part of the medical profession to give notice of births, and was informed by Dr. R. Dudfield, the medical officer of health of Paddington, that there was an objection because no fees were paid for the service imposed. He added that the Act had had the effect of greatly reducing infantile mortality. The magistrate considered that Dr. Jaffe had not complied with the Act and fined him 5*s.* and 2*s.* 6*d.* costs, pointing out that there was no suggestion against him of unprofessional conduct. The summons against Dr. Don was withdrawn, his defence being that he understood from the midwife in attendance that the father had given notice.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

COLYER, F. C., M.R.C.S., L.D.S., has been appointed a Member of the Board of Examiners in Dental Surgery of the Royal College of Surgeons of England.

COWAN, G., M.D. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Thetford District of the counties of Norfolk and Suffolk.

BOKENSTEIN, KENNETH, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Assistant Pathologist to the National Hospital for Diseases of the Heart, Soho-square, W.

HILLS, L. ERASMUS, M.D. Brux., M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Clinical Assistant to the X-ray Department and Medical Electrical Department, West London Hospital.

HILLS, WILLIAM GILMORE, M.D. Brux., M.R.C.S., L.S.A., has been appointed an Official Member of the Legislative Council of the Straits Settlements.

FEILING, ANTHONY, L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer at the British Lying-in Hospital.

FELLS, ARTHUR, M.B., C.M. Edin., has been appointed Assistant Surgeon to the Bristol Eye Dispensary.

HAMPSON, WILLIAM, L.S.A., has been appointed Electro-Therapeutist to St. John's Hospital for Diseases of the Skin, Leicester-square, W.C.

HATHERLEY, S. O., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Swinton District of the county of Yorks, West Riding.

KNOX, ROBERT, M.B., C.M., M.D. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Director of the Electrical and Radio-therapeutic Department at the Cancer Hospital.

PORTEOUS, HAROLD BURNET, M.B., C.M. Edin., has been appointed Assistant Surgeon to the Bristol Eye Dispensary.

SIMPSON, J. B., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Golspie District of the county of Sutherland.

STACK, EDWARD HUGH EDWARDS, M.B., B.C. Cantab., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgeon to the Bristol Eye Dispensary.

TAYLOR, WILLIAM PEACH, L.S.A. Lond., has been appointed Assistant Surgeon to the Bristol Eye Dispensary.

THOMPSON, J. E., M.B., Ch.B. Aberd., has been appointed Junior House Surgeon at the Southport Infirmary.

WILSON, HAROLD W., M.S., M.B. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Cancer Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with apartments, board, and laundry.

BATTERSEA POLYTECHNIC, London, S.W.—Lecturer for Friday evenings on "Meat and Food Inspection."

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with apartments, board, and attendance.

BRENTWOOD, ESSEX AND COLCHESTER LUNATIC ASYLUM.—Senior Assistant Medical Officer. Salary £300 per annum, with apartments, board, attendance, and washing.

BURNLEY, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.

BUXTON, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.

CANCER HOSPITAL, Fulham-road.—Surgeon.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum with board, lodging, and washing.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months. Salary £20, with board, residence, and laundry.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.—Registrars. Also Clinical Assistants.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £30 per annum.

CHELTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of Branch Dispensary, unmarried. Salary £80 per annum, with board and lodging. Also House Physician, unmarried. Salary £75 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £60 per annum, with board, apartments, and laundry.

CITY DISPENSARY, 29 and 30, College-street, Dowgate-hill, E.C.—Surgeon.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—Medical Superintendent. Salary £500 per annum, with house, &c.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board and lodging. Also Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging &c.

DOUGLAS, NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £90 per annum, with board and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—House Physician for six months. Salary £65 per annum, with board, residence, and washing.

FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer unmarried. Salary £50 per annum, with board and laundry.

FULHAM, PARISH OF.—Junior Assistant Medical Officer for six months. Salary at rate of £100 per annum, with board, furnished apartments, and washing.

GLASGOW, UNIVERSITY OF.—Examiner in Physiology, Examiner in Surgery (Systematic and Clinical), and an Examiner in Medicine (Systematic and Clinical).

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Surgeon.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50, with board, residence, and laundry.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.

LISCARD, WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL, Cheshire.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, attendance, &c.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Pathologist and Bacteriologist. Salary at rate of 50 guineas per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Honorary Dental Surgeon.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

PENDLEBURY, MANCHESTER CHILDREN'S HOSPITAL.—Visiting Surgeon. Salary £100 per annum.

PRESTON ROYAL INFIRMARY.—Senior and Junior House Surgeons, unmarried, for six months. Salaries £80 and £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—Assistant Physician. Also Assistant Surgeon.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon for six months. Salary £60 per annum, with board, lodging, and washing.

ROYAL EYE HOSPITAL, Southwark, S.E.—House Surgeon for six months. Salary £52 10s. per annum, with board and residence.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, London.—Assistant Demonstrator of Bacteriology. Salary £150 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £60 per annum, with rooms, board, and washing.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—House Surgeon. Salary at rate of £50 per annum, with board, residence, and laundry. Also Pathologist and Curator. Salary £50 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £30 per annum, with board, residence, and laundry.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £32 per annum, with board, residence, and laundry.

THROAT HOSPITAL, Golden-square, W.—Honorary Assistant Surgeon.

WAKEFIELD GENERAL HOSPITAL.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, lodging and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Physician for Diseases of Women. Also Anæsthetist.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WREXHAM INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Bantry, in the county of Cork; and at Kington, in the county of Hereford.

Births, Marriages, and Deaths.

BIRTHS.

FELL.—On Oct. 17th, at Flan How, Ulverston, the wife of Captain M. H. G. Fell, R.A.M.C., of a daughter.

FITZWILLIAMS.—On Oct. 9th, at Rustington, the wife of Duncan C. L. Fitzwilliams, F.R.C.S., of 64, Brook-street, Grosvenor-square, W., of a daughter.

KIRKNESS.—To Dr. and Mrs. W. Ronald Kirkness, on Oct. 11th, at Chesterfield, London-road, Portsmouth, a son.

VIRET.—On Oct. 9th, at Fernleigh, Horton-lane, Bradford, the wife of B. P. Viret, M.B. Lond., M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

JENKINS—EDWARDS.—On Oct. 12th, at St. Margaret's, Westminster, Herbert Thomas Jenkins, M.R.C.S. Eng., L.R.C.P. Lond., to Margaret Wood Edwards, of Treanna, Anglesey, second daughter of the late Dean Edwards, of Bangor, N. Wales.

SELLS—STOCKMAN.—On Oct. 11th, at St. George's, Bloomsbury, London, Hugh Lancelot Sells, M.B., Ch.B., to Charlotte, eldest daughter of Mrs. Stockman, of Slough.

SMITH—MILLER.—On Oct. 17th, at St. Paul's, Prince's Park, Liverpool, by the Rev. J. O. Coop, M.A., Vicar of St. Catherine's, Abercromby-square, assisted by the Rev. S. S. Horan, M.A., Vicar of St. Paul's, Geo. Francis Rawdon Smith, M.B., Ch.B., eldest son of S. Rawdon Smith, J.P., of Ironbridge, Salop, to Ellen Mary, eldest daughter of the late Alexander Alan Miller, of 59, Peel-street, Liverpool.

WINCH—MORRIS.—On Oct. 12th, at St. James' Church, Kidbrooke, Blackheath, by the Rev. J. W. Morris, M.A., Rector of the parish, assisted by the Rev. F. J. Kendall, Incumbent of St. German's, Blackheath, Stanley Brooke, son of Richard Winch, Morden Grange, Blackheath, to Eleanor Baville, eldest daughter of Clarke Morris, M.R.C.S., J.P., Gordon Lodge, Blackheath.

DEATHS.

HYDE.—On Oct. 12th, at Madeley-road, Ealing, Lieutenant-Colonel Henry Hyde, I.M.S. (retired), aged 70 years.

MACAN.—On Oct. 16th, at Cheam, Surrey, Jameson John Macan, M.A., M.D., aged 65 years.

RINGER.—On Oct. 14th, at Lastingham, Yorkshire, Sydney Ringer, M.D., F.R.S., aged 76 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PHYSICIANS AND CITIES.

IN the September number of *St. Bartholomew's Hospital Journal* is an interesting address by Dr. Norman Moore delivered at midsummer to the Abernethian Society. Dr. Moore took for his text sundry episodes in the history of the hospital, pointing out that when anyone now enters through the main gateway he walks over the same ground as that walked over by the Bishop of London who consecrated the hospital chapel in 1123, and by five of the barons mentioned in Magna Charta who were all benefactors of the hospital. So abiding and founded in antiquity are many of the London streets and ways. Inside the hospital were sundry houses which were let to tenants, and one of these who held his house from 1551 to his death in 1575 was John Caius, and his annual rent was £4. He was educated at Gonville Hall in the University of Cambridge and studied medicine in Italy mainly under Vesalius. He was widely read, a good Greek scholar, and later became President of the Royal College of Physicians of London as well as Master of the second foundation of Gonville and Caius. The mention of the College of Physicians naturally reminded Dr. Moore of Linacre, and he in turn of Chambre, who, like Linacre, was a priest as well as physician. Among other posts he was warden of Merton College, and naturally took an interest in Merton's celebrated son John of Gaddesden, whose "Rosa Anglica" he read and annotated, the actual copy being shown to the meeting by Dr. Moore. All these great men, said Dr. Moore, "were imbued with a high sense of public duty and with a regard for every part of learning as well as for their own subject and art."

Chambre, who was Dean of St. Stephen's, Westminster, built the cloisters there, which still remain and are perhaps the latest pre-Reformation ecclesiastical buildings in London. Caius refounded Gonville Hall and built a new quadrangle, also designing and leaving the money for the famous gates of the new Caius College. In another department of art he presented the silver caduceus which is still borne before the President of the Royal College of Physicians of London, and had the statutes of the College bound with silver ornaments. And as Cambridge is adorned by the gifts and genius of one physician, so, too, Oxford has her Radcliffe Library, while in London the British Museum and library owe their inception to Sir Hans Sloane, who, as Dr. Moore mentioned, was a successor of Caius as President of the College of Physicians. While on the subject of physicians and architecture, Dr. Moore might well have added that one of the greatest architects of the land, namely, Wren, had in his early days been a diligent student of medicine and anatomy.

BECHUANALAND PROTECTORATE.

Mr. Barry May, Government Secretary, Mafeking, reporting to the Colonial Office on the affairs of the Bechuanaland Protectorate for the year 1909-10, writes:—"The health of the inhabitants generally was good. There were no outbreaks of serious infectious diseases, while malaria fever, which during the previous year had been so prevalent, reverted in its incidence to normal proportions. The feared appearance of sleeping sickness in N'gamiland, referred to in last year's report, has not been verified. A native was met with by the magistrate in the North-Eastern portion of the district who had been ill, he said, for 18 months, and who showed symptoms pointing to sleeping sickness. In particular, he appeared to experience great difficulty in keeping awake, falling asleep even while in the middle of a conversation. On the other hand, there was no enlargement of the glands of his neck, and a blood smear taken from him was found, on examination by Dr. Moffat at Buluwayo, to contain no signs of trypanosomes. In consequence, however, of the seriousness of the matter, authority was granted for the temporary appointment of a medical officer at Lake N'gami to fully investigate any cases suspected of being sleeping sickness, and to determine if possible, the question as to whether or no the disease actually exists in the country. Dr. W. R. W. James, who has served in Uganda and who has had experience of the disease, was selected for the appointment, and is at the present time on his way to N'gamiland."

FIFTY YEARS OF SCIENCE.

THE well-known journal *Public Opinion* has celebrated its entry into the fiftieth year of publication by the issue on Oct. 7th of a special number which contains many articles of interest, among them being "Fifty Years of Change in British Homes," by Sir Walter Crane; "Fifty Years of History," by Dr. J. Holland Rose, Litt.D., and "Fifty Years of Literature," by Dr. C. T. Wright, LL.D. Sir Oliver Lodge sums up the progress of science during the past half century, in which he, of course, selects the names of Pasteur and Lister to illustrate the advance of medical science. Of Pasteur he says that his discovery of the nature of disease is in the act of revolutionising medicine, while at the same time it is throwing light on the activity of the soil in agriculture, the purification of rivers, the treatment of sewage, and on other problems of great importance. In surgery Lord Lister's discovery has enabled operations to be performed with safety which before were quite impossible, leading to a saving of life which can hardly be imagined.

RES VARIA ET MULTIPLEX.

To the Editor of THE LANCET.

SIR,—As an occasional contributor to your far-flung pages may I be permitted to ask, through their medium, if the users of atoxyl, who have had the misfortune to blind their patients and otherwise meet with disastrous results from its application, have taken care *not to sterilise by ebullition the injection?* It seems, even to me, a very puerile question to ask, seeing that the chemistry of the preparation must be well known, but on no other account can I find an adequate explanation of their bad luck with a drug which to me has been a veritable godsend.

Since 1902, when I first read about the "anilide metaarsenique" in the "Annales of Merck," I have given over 2500 hypodermic injections of a 15 per cent. solution of atoxyl without a mishap. The solution is prepared in the autoclave, as boiling in the open air sets free the "aniline," which is a tissue poison. Of this solution I give 2 c.c., intramuscularly, every second day during a fortnight, and then allow the patient to remain without the medication for a similar period. I use these injections in chronic malaria, chronic skin diseases, and in syphilis, and as a tonic in cases where arsenic is indicated.

As a specific in venereal disease it is not curative, but by alternating its use with that of a *soluble* salt of mercury the writer has had the satisfaction of reducing the mercurial treatment at least by half. "606" is still to be tried in this *ultima Thule*.

In chronic malaria it is well to give, say, two injections of a gramme each of a reliable soluble quinine salt twice a week, and the atoxyl thrice; for example, quinine Monday and Friday, and atoxyl Tuesday, Thursday, and Sunday. Then wait a week, and repeat. This latter, perhaps, may interest more practitioners *outre mer* than those domiciled in England, outside of Albert Dock.

Pardon the intrusion of a very ordinary country doctor far from the centres where science and civilisation have their head-waters, but of one none the less desirous of contributing a droplet to the current, and who begs to subscribe himself, Respectfully yours,

Weissnichtwo, Sept. 18th, 1910. W.

CHRISTMAS HAMPERS AND CLOTHING FOR LITTLE CRIPPLES.

Sir William P. Treloar has again sent us his annual appeal on behalf of the poor crippled children of the metropolis. With the generous assistance of the public Sir William Treloar has for many years provided the poor cripples of London with Christmas hampers, and on a modest estimate the fund brightens the lives of over 30,000 little sufferers at Christmas-tide. His Majesty the King provides 10 guineas a year towards the fund, which is administered on the widest possible basis, and is deserving of generous support. Donations should be sent to Sir William Treloar, 69, Ludgate-hill, London, E.C., and marked "Little Cripples' Christmas Hamper and Clothing Fund."

BOULOU WATER.

WE published last week an analysis of this drinking water, and have been asked to state that the address of the agent is not that which we gave, but is 122, High-street, Kensington, London, W.

BRITISH GOLF COURSES.

Messrs. Duckworth and Co. (3, Henrietta-street, Covent Garden, W.C.) have announced the publication this month of a new work entitled "The Golf Courses of the British Isles." The courses are described by Mr. Bernard Darwin, and there are 64 full-page illustrations by Mr. Harry Rountree. The price is 1 guinea net. Mr. Bernard Darwin is an English international player, who was last year in the semi-final of the Amateur Championship, and is also a well-known writer on golf. We believe that many members of the medical profession may like to know of this book, the golfing holiday being popular among them.

AN EXAMPLE FROM ROME.

THE Syndic, Signor Ernesto Nathan, has issued an "ordinanza" to safeguard the public from a danger of long standing—the consumption of bread and pastry which has been exposed in shop windows, or even at shop doors, to the contamination of flies in the one case and of promiscuous dust in the other. These articles of food must henceforth be exhibited to the buying citizen under glass. Another risk which the "ordinanza" provides against is that of the handling of these articles to test their consistency or freshness—a real risk if one considers the neglect of personal ablution on the part of a public with whom the nail-brush is by no means invariably an appurtenance of the toilet. Henceforth the purchaser will be prevented from fingering the bread and pastry exposed for sale, these articles having now to be exhibited under glass furnished with "cartelli indicatori" (card labels). If, in violation of the "ordinanza," they have been handled by the customer, they are

to be impounded and "esclusi dalla vendita" (removed from sale). Bakers are forbidden to take back or to offer for sale such articles, even after being "grattugiati" (grated), which have been exposed and handled in restaurants or carried back from private houses by the distributers. In restaurants or at railway buffets bread will be put on the table in the necessary quantity, and no more; it will be wrapped in paper; and, if already handled or left behind by preceding guests, it cannot again be offered for consumption. Contravention under any of these heads of the "ordinanza" incurs a severe penalty. The Syndic is already assailed, censoriously, for these opportune measures; but the better-inspired and better-mannered public are on his side, hoping as they do that the worse than untidy practices at which they are aimed will gradually disappear, like that of spitting in public vehicles or on the floors of restaurants—a practice which died hard, till its danger to public health was seen to be not less real than its offence to decency.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Nov. 7th–12th (Cape Town).—Twelfth South African Medical Congress (1910).

In 1911:—

May–October (Dresden).—International Hygiene Exhibition.

June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.

July (Birmingham).—British Medical Association.

August or September (Berlin).—Third International Laryngo-Rhinological Congress.

September (Brussels).—Exhibition of Fractures.

September (Sydney).—Australasian Medical Congress.

Sept. 24th–30th (Rome).—International Congress on Tuberculosis.

„ 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.

October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—

September (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913 the only fixture so far is in London, where the Seventeenth International Congress of Medicine will take place.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—E. B. Dowsett, W. W. James, J. Howard Mummery): at 8 P.M.

Paper:
Mr. F. J. Bennett: Destruction of Teeth by Milk Germs.

Casual Communication:
Mr. J. F. Colyer: A Myeloid Sarcoma associated with a Septic Oral Condition.

Presidential Address:
Mr. W. B. Bacon.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bart.): at 5.30 P.M.

Paper:
Dr. A. M. Gossage and Mr. H. Rock Carling: Multiple Cartilaginous Exostoses.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos street, W.: at 4.30 P.M.

Cases, &c.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretary—F. A. de T. Mouillot): at 5.30 P.M.

Presidential Address:
Dr. T. Fred Gardner: Air and Water: Is there Anything New under the Sun?

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Presidential Address:
Dr. Theodore Thomson, C.M.G.: The Enteric Fever Carrier.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Mr. J. Bland-Sutton: The Clinical Aspects of Metastatic Cancer of the Ovary.—Dr. B. Spilsbury: The Pathology of Certain Tumours of the Ovary.

MEDICO-LEGAL SOCIETY, 11, Chandos street, Cavendish-square, W.C.

TUESDAY.—8.15 P.M., Presidential Address: The Influence of Social and Legal Restrictions upon the Practice of Medicine.—Mr. D. Cotes-Preedy: The Law and Experiment.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Mr. Bland-Sutton: Diseases of Elephants' Tusks in Relation to Billiard Balls.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Discussion on the Diagnosis and Treatment of Cystic Tumours of the Breast (opened by Mr. D'Arcy Power, illustrated by Mr. E. H. Shaw).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Mr. Shattock: Specimens illustrating Syphilis. (Museum Demonstration.)

FRIDAY.—5 P.M., Prof. A. Keith: Specimens illustrating the Various Forms of Imperfect Differentiation of the Sexual Organs and Characters. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. H. Sequeira: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. S. R. Russell: Diagnosis of Disseminated Sclerosis.

TUESDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 P.M., Dr. L. Guthrie: Tetany and Allied Affections.

WEDNESDAY.—4 P.M., Mr. C. W. Rowntree: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. L. Mummery: Diagnosis in Diseases of the Rectum and Anus.

THURSDAY.—4 P.M., Dr. C. Riviere: Clinique (Medical). 5.15 P.M., Lecture:—Dr. Rozenraad (Homburg): Obesity and Some Changes in Metabolism.

FRIDAY.—4 P.M., Dr. D. Mackenzie: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture II.)

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low; Insects as Carriers of Disease in Tropical Medicine.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Ll. Williams: Methods of Extraction of the Teeth, When and How.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Morton: X Ray Examination of the Digestive System.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Diseases of the Ear, the Lines on which Treatment should be Based.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. J. Taylor: Treatment of Certain Nervous Diseases.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: Injuries to the Eyeball.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Mr. Pendlebury: Some Minor Operations of General Practice.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Tuberculous Peritonitis.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

THURSDAY.—4.30 P.M., Sir Lauder Brunton, Bart.: The Value of Blood-pressure Observation in Medical Practice (Opening Lecture of the Winter Session).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. R. Russell: Paraplegia.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Taylor: Clinical Cases.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE CHEST, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Treatment of Eczema in all its Forms.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Habershon: Bronchiectasis.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. G. Wright: Intestinal Obstruction. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (29th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 19th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 13	30·04	N.E.	0·30	59	59	51	57	58	Overcast
,, 14	30·40	N.E.	...	66	54	51	49	52	Overcast
,, 15	30·21	E.	...	73	56	46	47	49	Overcast
,, 16	30·22	S.E.	...	89	60	47	51	54	Fine
,, 17	29·92	S.	0·01	75	60	49	55	56	Raining
,, 18	30·07	WSW	0·09	78	61	48	48	49	Cloudy
,, 19	29·67	W.	0·10	63	57	49	50	52	Cloudy

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